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LEAVING THE BACK DOOR OPEN
DON'T LET THE 'WEENIE' THING HAPPEN TO YOU

BY REBECCA ROHAN

In an alarming report of something that (mostly) never happened, a *Wall Street Journal* article jumped to the Associated Press (AP), then multiplied across local television and newspaper outlets with the "news" that Microsoft Corp. engineers had put a "secret password" (back door) into several versions of Microsoft's Internet server software. The supposed password ("Netscape engineers are weenies" spelled backward) allegedly "could be used to gain illegal access to hundreds of thousands of Web sites," according to the AP, which painted a picture of crackers getting "a road map to such things as customer credit card numbers."

Microsoft issued a bulletin advising customers to delete the dynamic link library file DVWSSR.DLL from several versions of its Internet server software (www.microsoft.com/ technet/security/bulletin/ms00 025.asp).

Steve Lipner, manager of Microsoft's Security Response Center, was quoted as saying back doors were "absolutely against" Microsoft policy—a "firing offense" that turned out to be more smoke than fire. The now infamous "weenie" sentence wasn't even a password—it was an irresponsibly chosen hash string for encoding file names for their trip between client and server.

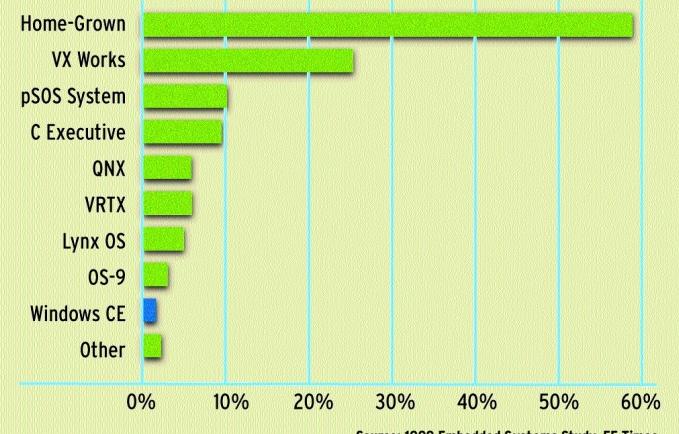# Microsoft Targets Embedded Market With Renewed Vigor

BY EDWARD J. CORREIA

In a step toward making Bill Gates' vision of Windows everywhere a reality, Microsoft is again focusing on the embedded market. With the buzz of New Orleans and its Windows Hardware Engineering Conference (WinHEC) in the background, the company has formed the Embedded and Appliance Platform Group, a new division that is said to provide the cornerstone of the company's new three-part embedded strategy.

Microsoft has committed to giving developers an improved organizational structure for all of its embedded initiatives, an enhanced suite of embedded operating systems and an improved set of licensing policies and support services for developers.

EMBEDDED DEVELOPMENT: CURRENT RTOS USE

RTOS	Usage
Home-Grown	~58%
VX Works	~25%
pSOS System	~11%
C Executive	~10%
QNX	~5%
VRTX	~5%
Lynx OS	~5%
OS-9	~3%
Windows CE	~2%
Other	~2%

0%   10%   20%   30%   40%   50%   60%

Source: 1999 Embedded Systems Study, EE Times

Windows CE, which was the least-used RTOS in 1999, should get help from Microsoft's renewed commitment to the embedded platform.

Debate Over Java Reaches Boiling Point
Licensees call for control of platform to be open, vendor-neutral

BY DAVID RUBINSTEIN

The debate over the future of Java is simmering, and in the case of at least one important critic, it has reached a boiling point. While **ANALYSIS** Sun Microsystems Inc. gets ready to celebrate Java's fifth anniversary at its upcoming JavaOne conference in San Francisco, its licensees are becoming more outspoken in their calls for Java to evolve into a more open, vendor-neutral platform.

At JavaOne, Sun will be demonstrating that Java is a platform that extends to virtually any device with a microprocessor and some means of connectivity. "Java is the thing that is powering the Net," said George Paolini, Sun's vice president of Java Community Development. "We've become mobile citizens of the world. We want access not only to voice but to data, and not only data, but dynamic content, and I think Java is the thing that's making this happen."

Sun says that giving up control of Java would lead to modifications of the source code, and ultimately, to its fragmentation. Yet smaller partners are afraid to bet the future of their companies on a language and platform whose specifications are controlled by a single entity—which sometimes is a competitor as well as a business partner.

Sun has tried to walk this fine line with its Java Community Process. Under the JCP, Sun has established a partnership with its licensees to evolve and extend the platform, with the company making the source code available for a licensing fee but requiring that code modifications be done in such a way so as to allow Sun to retain final approval. Sun claims that its policies prevent fragmentation of a maturing platform. Its licensees say this allows Sun to maintain too tight a grip on technology that is fast becoming, in Sun's own words, the power of the Internet. They claim that Sun's licensing

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SILVERSTREAM MOVES INTO XML COMMERCE

BY ALAN ZEICHICK

Perhaps best known for its SilverStream Application Server, SilverStream Software Inc. used its annual user conference as the platform to begin an aggressive campaign to extend its product family into the electronic business software market.

At the WorldWide User Conference, held mid-April in Washington, D.C., SilverStream (www.silverstream.com) introduced its new slogan, "The ePlatform Company," which also represents its collection of present and future e-business-related products. The new products, currently under development, are an application framework for building commerce-related Web portals, an e-commerce-oriented server and business rules designer.

David Warthen, Chief Technology Officer, **Ask Jeeves**

"One of our biggest challenges was to take something that's really hard to build–natural language Web querying–and disguise the complexities to make it easy to use."

"In the past, we were focused on developing the core question-answering technology."

"Now we're expanding to provide solutions to a multitude of businesses and need to scale accordingly."

RESEARCH

"It's a big advantage to be able to draw off
the Microsoft Visual Studio tools, and in particular,
the way XML has been embraced to make
development much easier and faster."

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Windows 2000
SQL Server™ 7.0
Visual SourceSafe™

To find out how David and his team built
Ask Jeeves, go to: **www.JEEVESstory.com**

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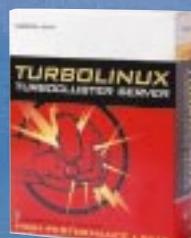
RATIONAL EMBRACES E-BUSINESS
PRODUCT UPDATES EMPHASIZE WEB-BASED DEVELOPMENT

BY DAVID RUBINSTEIN

Rational Software Corp. is blitzing the software community with a dozen product upgrades that showcase the company's new emphasis on Web application development. The releases, announced May 1, mark the second phase of a three-pronged effort to accelerate Rational's transition into the arena of development for e-business.

"We have focused on things that increase speed and quality in application development," said Eric Schurr, senior vice president of marketing and suite products. "Developers used to ask if you wanted [an application] quickly, or of high quality. You can't make that trade-off anymore in the world of e-development." The goal, he said, is fast, high-quality products.

The new releases could be divided into three parts: a set of best practices that guide businesses through the development process, upgraded tool sets that Schurr said will unify the entire development team throughout the project's life cycle, and a consulting services staff that transfers knowledge to a customer's organization and increases that customer's proficiency in development.

As part of the best practices improvements, Rational (www .rational.com) has enhanced its Rational Unified Process version 2000 content to deal specifically with e-business, such as architecture, user-interface design, more than 100 tool mentors, testing and Web deployment guidelines. In addition, Rational has included a model for developers working within the IBM e-business framework, one of the first results of last summer's partnership agreement between the two companies.

Many of the company's tool sets have been improved to emphasize Web-based development, Schurr said. For example, AnalystStudio, which includes the RequisitePro and Rose products, now includes prepackaged templates for managers performing requirements analysis. The templates include a set of typical use cases, actor specifications and other tools necessary for systems definition. Also, Analyst-Studio has integrated user interfaces of the Rose data-modeling tool, the Requisite-Pro requirements management tool and the ClearQuest defect-tracking tool to allow for quick

RATIONAL SUITE:	Analyst Studio	Development Studio	Test Studio	Performance Studio	Enterprise
Optimizing Solutions					
Rational Rose	✓ DM	✓ E, RT		✓ E	✓ E
Rational Purify		✓	✓	✓	✓
Rational PureCoverage		✓	✓	✓	✓
Rational Quantify		✓	✓	✓	✓
Rational TeamTest			✓	✓	✓
Rational TestFactory			✓	✓	✓
Rational LoadTest				✓	
Unifying Solutions					
Rational Unified Process	✓	✓	✓	✓	✓
Rational RequisitePro	✓	✓	✓	✓	✓
Rational ClearQuest	✓	✓	✓	✓	✓
Rational SoDA	✓	✓	✓	✓	✓
Total Products:	5	8	9	11	10

DM = Data Modeler Edition
E = Enterprise Edition
RT = RealTime Edition also available

Rational's e-business development blitz involved the upgrading of a dozen products, including Rose RealTime Edition.

and productive systems management, Schurr said.

DevelopmentStudio also has been expanded to provide practical application of the Unified Modeling Language (UML), including data and Web modeling with Rose and round-trip engineering support for XML/DTD and Enterprise JavaBeans components with Rose RealTime Edition. Rose RTE supports BEA's WebLogic and IBM's WebSphere application servers, with integration with IBM's VisualAge for Java and Microsoft's Visual J++. Also, the release includes round-trip engineering for Windows DNA for developers working in C++ and Visual Basic. Rose RTE is prepackaged with design templates for Microsoft Transaction Server, Active Directory Objects, Visual C++ and Visual Basic. And a new product, Rational Component Test, allows developers to test their JavaBeans before they are integrated into a final application.

Enhancements to PerformanceStudio, Schurr said, will now make it possible to use Linux to load-test a Web server. This suite includes what Schurr termed a "wealth of improvements" to the technology that allows a company to monitor and verify the integrity of its Web site. TestFactory, an element of the suite, has been upgraded from working only on Visual Basic applications to include all C++ and Java applications. Rational also has added functionality for code coverage analysis and performance profiling for Java applications, according to Schurr.

To accompany these new product features, Rational has expanded its services division to include more than 1,000 professionals. "We're not a body shop organization," Schurr said. "We don't do the work. We send people on-site, but only to get that enterprise's skill level to the point where it can function most effectively."

LOOKING FORWARD, BACK

The above releases represent the second phase of Rational's new business strategy. The first phase was the March rollout of the UML-based data-modeling features added to Rose. The third phase, which Schurr would not yet discuss in detail, is planned for unveiling in late May.

Schurr said Rational's strategy is part of a continuing transition toward Web-based development. He said 80 percent of the company's customers are from Web-related businesses: Thirty-five percent come from infrastructure companies such as Cisco Systems and Motorola, another 35 percent come from e-business companies, and 10 percent come from manufacturers of devices such as PDAs and other wireless devices. ∎

Leave Those HTML Forms Behind: XForms Will Follow You Anywhere

BY REBECCA ROHAN

It's a new millennium, and the Goodwill truck is coming for the white text fields, gray Submit buttons and long waits for server updates that have been the furniture of e-commerce since 1993. On April 18, the W3C announced the First Public Working Draft of "XForms 1.0: Data Model," a specification designed to bring powerful XML-based back ends to a variety of front-end devices, from mobile phones to scanners to printers.

Mom-and-pop operations may still squeeze months or even years out of HTML forms because weekend Webmasters haven't moved from HTML to XML—but serious e-business players will sign onto XForms technology for its more powerful interface support, integration with other XML tag sets, ability to support more than one form per page—and more than one page per form—and its greater scalability to whatever devices and audiences they encounter in their travels in the 21st century.

THINK CROSS-DEVICE

"If you want to order cinema tickets, you should be able to do so on a browser, on a TV and over a mobile phone," said Josef Dietl, vice president of marketing for Stack Overflow AG (www.mozquito.com), maker of the XHTML authoring tool Mozquito Factory. "Currently, you would use WML [Wireless Markup Language] for mobile forms, HTML for browsers and so on—it becomes fairly expensive," said Dietl. Besides development costs, current forms technology can cost you in customer goodwill. "If I tried to book a movie ticket for the 35th of May, I'd get a warning that that's not a valid date," said Dietl, "but the data would have to go back to the server first to find out it's an invalid date." With XForms, the date validation would occur on the client side. "The feedback is more involving when people spend less time waiting for the server to come back to them," noted Dietl.

XForms splits logic, data and presentation into three separate issues. The logic layer sets up dependencies between fields, using a lightweight expression syntax, with the option to call out to scripts as needed. The data layer uses built-in or custom data types. The presentation layer marks up the form's various looks while customizing such things as dates and currencies according to user preferences. A data field can have multiple presentation controls bound to it.

Since XForms separates function and presentation, you're "effectively editing XML in their browser," said Dietl. "You can attach something like an XML schema." Art people and code people can better contribute in their native area of expertise. The form/function separation also promises to make life easier for international audiences and those with special needs, such as visual impairment. "Instead of bold text, you could have a screen reader read louder," said Dietl.

OVERFLOWING ENTHUSIASM

"For us, this is an example that everybody's contribution can shape the Web," said Dietl. "Stack Overflow started in 1998 with four people, and now we are really shaping the technology—we have two people in the [XForms] working group." Stack Overflow chief executive officer Sebastian Schnitzenbaumer and chief technical officer Malte Wedel were among the authors of the XForms spec, although the company's Mozquito Factory product currently implements XHTML-FML (Forms Markup Language), which uses the XHTML 1.0 transitional DTD (Document Type Definition). "The current working draft is the data model, and our technology is the presentation," said Dietl. XForms may be part of the Mozquito Factory authoring environment by the end of the year.

You can comment on the further development of XForms by joining the XForms public mailing list. Send an e-mail to www.forms.request@w3.org with the word subscribe in the subject header. ∎

MAKING CROSS-PLATFORM INSTALLATION EASIER

IBM, InstallShield join forces to co-develop next-generation interface

BY EDWARD J. CORREIA

Windows developers take software deployment for granted. Thanks to an alliance between IBM Corp. and InstallShield Software Corp., non-Windows programmers may soon share the same luxury. The two companies have joined forces to develop InstallShield Java Edition 4.0, a platform-independent installation authoring solution designed to ease the pains of cross-platform installation.

Deploying a Windows application "is not something most people think about," said John McIndoe, public relations manager at InstallShield. "But people familiar with installing Unix-based software can tell a whole different set of tales. They're working with shell scripts and tar files and things that are far from intuitive and customer friendly."

Installing Unix-based software is very much a part of IBM's business. In an effort to address some of the complexities and make cross-platform development more efficient, IBM sought the expertise of InstallShield (www.installshield.com) to help them build an installation interface for the wide variety of products it offers. "We're creating an installation program that will ultimately look the same across multiple products and platforms," said Scott Handy, IBM's Linux solutions marketing director. IBM currently develops software for platforms as diverse as AIX, AS/400, Linux and OS/2, each of which now requires a different installation tool. "The installation programs differed greatly for these platforms depending on the product," said Handy, but all will benefit from InstallShield's "user-friendly, Windows-like approach" to software installation, he said.

The main benefactors of the new tools will be IBM customers and business partners, who will receive a simplified, consistent installation methodology for all IBM products and platforms, "making it easier and less expensive for our customers because their IT staff only needs to be trained on one install program," said Handy.

"We're able to provide an easy-to-use solution that will save money, reduce time-to-market and improve the installation process," said Dick Sullivan, vice president of solutions and integration marketing at IBM. "Our work with Install-Shield is a big win for our customers and [independent software developers]," who will be able to take advantage of the installation interface for their own cross-platform development efforts.

Developers using the Install-Shield Java Edition receive a self-contained, point-and-click development environment that permits them to reuse installation code to create a consistent end-user installation experience across multiple platforms on a single CD. To run the installer, a Java Virtual Machine (JVM) must be present on the host machine, but it can be embedded along with the installation files and launched at run time. "That allows developers to leverage specific features and functionality of a given JVM," said InstallShield's McIndoe—functionality that can then be passed on to the user.

Availability of InstallShield Java Edition version 4.0 is scheduled for late this year; prices are not yet set. Install-Shield sells its current version 3.0 for between $795 and $995. IBM plans to bundle its version of the product for free along with WebSphere and some of its other development products. ∎

Sun's Forte Fusion 2.0 Trims EAI Development Time

BY DOUGLAS FINLAY

Lifting strategies from the playbooks of its competitors, Sun Microsystems' Forte Division has embarked on an aggressive campaign into the EAI marketplace by combining the Extensible Stylesheet Language Transformation (XSLT) specification with a fast business process engine to create the Forte Fusion 2.0 product suite.

The new features are designed to enable less-technical developers to create applications for companies that need to solve the growing dilemma of taking customer orders via the Web and integrating them into the business back-office infrastructure.

"Fusion is an integration suite enabling companies with large portfolios of applications and services, running perhaps 50 applications on several operating systems and several relational databases, to take these disparate applications and permit them to participate in a services-oriented architecture that provides services or products to the consumer," said Drew Engstrom, product line manager for Sun.

He said the way to enable full integration of all applications is to require them to speak in XML. "XML becomes the canonical structure for exchanging data and process information," he said.

Accordingly, a central feature of release 2.0 is XSLT, an XML style sheet specification approved by the World Wide Web Consortium in September 1999. Aside from providing more data transformations such as math calculations, field links to combine two different fields into a new field and providing external table lookups, XSLT enables departments—and business partners—using different XML dialects to translate those dialects into standard XML or any other dialect, said Engstrom.

"If SAP churns out XML, customers' names may be different, or monetary amounts such as deutsche marks have to be translated into Euros," said Engstrom. "XSLT can do all those translations from one XML schema to another."

He added that, like using Excelon's recent XSL Stylus Editor version 2.0, developers could translate XML dialects as simply as dragging and dropping elements into style sheets.

But while XSLT stands as a popular new feature of release 2.0—and a strategic differentiator at present—Engstrom claimed 2.0's business process engine is the key component. "Competitively, the process engine is a strong suite," Engstrom said, "because it's more robust and scalable than many in the market." He said the process engine supports two styles of process automation: one in which there is total automation, with no human intervention of the application required; and another, in which human intervention is involved. "If a person's credit has exceeded its limit, an authorized person could override that limit," he said.

A key architectural feature separates out the different domains for developers, he said. "A big issue with integration over the last few years is that it's been done in an invasive way, where integrating deep into the API layers to replace one application can impact on 10 other applications," he said. By separating out the domains, he said, the process domain can decide how processes will flow, while the integration domain decides how integration is handled, and so forth. "We're not impacting or touching any of the code inside the application layers," he added. If there's change to one business layer, it won't impact the other logical layers, which greatly reduces time when changes are required.

He said the process engine's architecture accesses the database I/O infrequently, running instead as compiled code in memory to create a fast, scalable engine that handles more than 1 million transactions per second. He said it is available on 11 different platforms, including IBM's S/390 mainframe environment. "With XSLT, we can actually reuse some legacy applications because we're creating an interface that exposes those services as XML."

Expected to be available late in the second quarter, pricing will start at $10,000 for a single Forte Fusion Adapter, and will run up to $150,000 for a Forte Fusion solution that includes the business process engine. ∎

WebGain Acquires TopLink

WebGain Inc., the spinoff company jointly created by BEA Systems Inc. and Warburg, Pincus Venture Partners, continues its shopping spree by buying the TopLink product line from The Object People Inc.

TopLink serves as the object-to-relational mapping element of WebGain's integrated development environment, Studio suite. In March, WebGain acquired Tendril Software Inc. to incorporate Tendril's StructureBuilder into the suite. Other pieces of the suite are WebGain's Visual Café, acquired from Symantec Corp., and Macromedia Inc.'s Dreamweaver HTML authoring tool.

Joe Menard, appointed as chairman and CEO of Web-Gain on April 21, said, "We had licensed TopLink but had not finished the acquisition by the time we wanted to launch Studio." He would not disclose the terms of the acquisition, as WebGain is a privately held concern, but did say TopLink's management team will be kept on at WebGain, as will some sales and marketing people. In a move separate from the Top-Link purchase, BEA acquired the consulting and educational arms of The Object People, which were not related to the TopLink product line.

TopLink, like Visual Café, will continue to be sold separately as well as part of WebGain's Studio suite, which, Menard emphasized, supports multiple platforms from the iPlanet Sun-Netscape alliance and Oracle Corp., as well as BEA's WebLogic application server. The reason for multiple platforms, Menard explained, is that as Java 2 Enterprise Edition (J2EE) becomes more prevalent, a volume server platform market will develop, and WebGain wants to be in a position to exploit that growth.

Menard said that WebGain (www.webgain.com) is looking at other technology areas for potential licensing and partnership agreements, but said nothing is definitive at this point. "We can do component construction," Menard said. "Now we're looking at assembling components into applications, and capturing business processes" to develop customized applications, he added.

Menard, who had served as interim CEO since the company's inception in January, takes the helm at WebGain after four years at BEA, where he most recently held the position of president of the e-commerce server division. ∎

RED HAT'S CTO: LINUX WILL NOT FRAGMENT

If you're looking for accord on the issue of Linux fragmentation, you may as well be talking about religion or politics. One side claims that with so many companies developing customized Linux solutions, the platform cannot help but fork because not all developers are willing to share their developments for free. Such dissension forces application developers to modify their code to run on all of the forks, similar to the fate suffered by Unix.

On the other side is Red Hat Inc. (www.redhat.com), which essentially gives away its version of Linux for free and generates revenues by selling services to those building solutions around its products. But like many mainstream Linux suppliers, Red Hat is developing improvements to the kernel in an effort to set its product apart, which skeptics say will destroy the platform. Chief technical officer Michael Tiemann explained why his company does not believe Linux will fragment.

Linux, by design, makes fragmentation impossible, said Red Hat's Tiemann.

SD Times: There are many companies developing improvements for Linux, which effectively splits the operating system into different distributions. Doesn't this defeat the purpose of open source?
Michael Tiemann: The answer is not really. Presently, none of the major Linux distributors are stupid enough to distribute a development kernel. There are two code forks of the kernel, and this is by design from [the] early days. There is something called the stable fork, which has been frozen and tested, and a very honored and respected person has said, "This is the stable branch." And then there's the development branch, which goes forward at a breakneck pace. There have been as many as three releases of a development kernel in one day. The development kernel averages a new release every one to two weeks. All Linux developers have equal opportunity to have their patches reviewed for the development kernel. All Linux developers also have equal opportunity to have their patches applied to the stable branch. But the stable branch never accepts new development work, only bug fixes. New development work always goes into the development tree.

This large number of Linux developers at Red Hat doing kernel development are working in concert with the rest of the community on the development branch. So you can imagine that with new releases coming out every week, if we went and did our own fork—if our developers could not synchronize with the other developers—we'd all fragment within a week. There's no sense in forking on that branch.

So, when do the features that come out of the development branch get put into the stable fork?
When Linus Torvalds and Alan Cox agree the development branch is finished and should be turned into a stable branch, at which point a new development branch is created…

…which includes the new capabilities created in the old development branch?
Yes. Right now the main number of the development branch is called 2.3. When a kernel named 2.4 is announced, that effectively freezes the stable branch and a 2.5 [development] branch will be opened.

So the stable branch and the development branch are one and the same at the moment the new stable branch is announced?
Yes. Then the development branch leaps ahead. And it may go off in any one of a number of directions. Because you have all these people with all these features they all want to implement, and it may take months before anybody agrees on what the first development release should be because everyone wants to rip out the old and put in the new. And there's mayhem.

But once the first release comes out, people all start working in more or less [the same] direction. And there could be three releases in one day; there could be one release every three days or every two weeks. But it's happening so frequently that if all the developers didn't cooperate, the noncooperating developers would be two weeks behind in two weeks and six months behind in six months. And so that is what prevents forking of the development branch.

The guy who manages development of the stable branch is Alan Cox, and he works for Red Hat. So as far as I know, we don't have a problem forking with the stable branch.

Well, that might be fine for Red Hat, but what about other Linux companies?
Obviously you can't follow the idea that everybody has their own stable branch maintainer, because there can be only one. There have been Linux companies in the past that have tried to go their own way, but [they] rapidly marginalize themselves. And I think that, by and large, any company that does try to do this will find themselves being marginalized. Everybody is following the model that [requires] changes to the Linux kernel [to be] approved. In the scope of normal Linux development, the well-established methodology is "the best code wins."

Do the same rules apply in the embedded space?
The problem in the embedded systems world is that what's best for one [hardware] platform might be totally out of the question for another. The natural forces that induce fragmentation in the embedded systems world don't really exist in the desktop or server world, in part because even though desktop and servers are different systems, they [have] much more [in] common than embedded systems do. So, the approaches that people were taking last year were to hand-manipulate the Linux configurations. Any time you have a manual process for modifying code, you wind up with unique and unreproducible results.

How does Red Hat's embedded Linux API address that problem?
The idea of EL/IX was to provide a standard API with standardly defined sets of functionality, which could then be manipulated by configuration tools. So the idea was that by having configuration sets and configuration interfaces defined for Linux, you could have perfectly reproducible results with any Linux distribution.

I read this great interview with [Transmeta Corp. CEO] Dave Ditzal and Linus Torvalds about the [Crusoe] chips, and Dave made the comment that "gravity is on their side." That describes how I feel about using automatic configuration vs. manual. *–Edward J. Correia*

News Briefs

COMPANIES

Rogue Wave Software Inc. has adopted a corporate branding strategy, E-commerce E-ssentials, that reflects the company's repositioning as a developer and reseller of components and solutions for building customized e-commerce applications. The key to the company's strategy will be the delivery of new XML, Java and C++ products that facilitate the development, integration and enhancement of e-commerce systems . . . **StarBase Corp.** has acquired **ObjectShare Inc.**, a provider of object-oriented solutions as well as consulting and training services, for about $8.84 million. Each ObjectShare shareholder will receive 0.09172 shares of StarBase common stock for each share of ObjectShare common stock. StarBase will issue 1,211,983 shares of StarBase common stock to ObjectShare shareholders . . . **SoftQuad Software Ltd.**, a developer of XML-enabling technologies and commerce solutions for e-business, has launched the XMetaL Quick Start Program. XMetaL is an advanced XML authoring solution that delivers ease of use to authors, while shielding them from the complexities of XML. A word-processorlike environment makes XMetaL a broadly deployable solution that reduces training and implementation costs, the company said. The cost of the program is $10,000 . . . **Intelligent Medical Objects Inc.**, a developer of medical applications and vocabulary management, has sold its database analysis software, Virtual DBA, to **Quest Software Inc.**

PRODUCTS

Inprise/Borland is making available **Midas 3**, middleware technology and components for rapidly building Delphi and C++ Builder Internet applications, the company said. Now supporting XML and dynamic HTML, Midas 3 increases scalability and flexibility of large-scale Internet applications, it was reported . . . Continuus Software Corp. has begun shipping **Continuus Change Management (CCM 5.0)** supporting Red Hat Linux 6.1. CCM 5.0 is also available on Windows 9*x*/NT/ 2000, Solaris, HP-UX, AIX, TRU64 Unix and Irix . . . Symantec Corp. has expanded its **Norton AntiVirus** security application to scan and analyze files in the ELF file format—the format used by the Linux platform . . . Intuitive Systems Inc. is shipping its Java performance profiling tool, **Optimizeit 3.1 Professional**, for Linux, allowing developers to test and improve the performance of Java applications, applets, servlets and JavaBeans . . . BEA Systems Inc. has added the **eLink Information Integrator**, a tool for transforming and routing complex data between enterprise applications, to its eLink Integration Server. Information Integrator provides core-enabling technology for companies to leverage critical business information across front- and back-office applications, according to a company statement . . . WIBU-Systems has improved the installation procedure of **WIBU-KEY** in version 2.53 and made it easier to implement, the company announced. The WIBU-KEY Runtime-Kit Set-up has integrated the five installation programs into one compact program . . . Servertec has upgraded its **iServer** middleware Java servlet server to include the Java Servlet API version 2.2. The upgrade, version 1.8.0, now provides developers with multiple servlet contexts, enabling groups of servlets to share common information. Also included in the upgrade are API changes, bug fixes and updates to documentation.

PEOPLE

Software Emancipation Technology Inc. has appointed **William Jones** as vice president of business development. Jones will report to **Dave Champagne**, president and CEO. Prior to joining SET, Jones was director of eastern area sales for Seagate Software, a developer of network, system-management and storage solutions targeting the Fortune 500 marketplace . . . **John Blaine** has been named executive vice president at Corel Corp. Blaine comes to Corel from Sterling Commerce Inc., where he most recently served as vice president and controller. ■

JONES

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J2EE DRAFTS ON TAP AT JAVA ONE
Specs likely to be made public at fifth-anniversary conference

BY CATHERINE EHR

JavaOne, which claims to be the largest developer conference on the planet with more than 20,000 attendees in 1999, is celebrating its fifth anniversary with its biggest show ever. This year, the conference and show are taking over the entire 1.2 million-square-foot Moscone Convention Center in San Francisco for five days, from June 4 to 9.

According to Bill Roth, Sun Microsystems Inc.'s group product manager for Java 2 Enterprise Edition (J2EE), there is "a good possibility" that public drafts of Sun's J2EE specifications will be available. "We hope the expert group finish their work," Roth said. "That starts the [community] process." Roth said it is likely the component technology specifications, for Enterprise JavaBeans and servlets, will be ready. As for the platform spec-

ifications, Roth said there is ongoing "vigorous debate that may delay it."

The goal of this year's show, which is composed of the JavaOne Conference, the JavaOne Pavilion and Java University, is to provide Java programmers and software development managers with the latest knowledge, technology and tools in Java development.

JAVAONE CONFERENCE

The conference proper will run from Tuesday, June 6, through Friday, June 9, with several keynote speakers opening the day's sessions.

Individual conference sessions include lectures and tutorials from luminaries in Java technology development. Topics cover the full range of Sun's Java-related products, including the Java 2 Platform (Standard, Micro and Enterprise

editions), Jini technology and the Java technology program. Last year there were more than 600 speakers giving technical talks at the conference that also featured more than 180 informal Birds of a Feather (BOF) sessions—numbers that should be topped this year. Speakers and sessions for this year have not yet been disclosed.

JAVAONE PAVILION

More than 380 exhibitors packed the JavaOne '99 conference show floor, demonstrating a wide range of applications and devices. And the conference offered numerous other special interest areas, including a "Device Wall" for consumer and embedded devices incorporating the Java platform; an Enterprise JavaBeans technology "deploy-athon"; and "Tank Wars," which used Java technology to operate remote-controlled toy tanks.

Look for more such innovative uses of Java at this year's Pavilion. There will be a special Pavilion Preview on Monday night from 5 p.m. to 8 p.m.

Java University, a series of one- and two-day intensive training courses in Java development, is designed as an education-oriented, technical-training complement to the JavaOne Conference. It's aimed at skilled Java technology, structured and object-oriented developers, ISVs, architects and consultants. Sessions are held on the Sunday

and Monday preceding the opening of the conference.

The keynote presenter of this year's general session at Java University is Bill Joy, Sun's chief scientist. This presentation will be held Monday at 8 a.m. Training sessions follow the keynote, beginning at 10 a.m.

Jim Waldo, Sun's lead architect for Jini technology, will deliver the keynote at this year's Jini technology session, held on Sunday at 8 a.m. The Sunday training sessions also are scheduled to begin at 10 a.m. ∎

JAVAONE 2000 CONFERENCE   www.java.sun.com/javaone

Conference: June 6–9, Moscone Convention Center, San Francisco
Java University: June 4–5, Moscone Convention Center

KEYNOTE (JAVA UNIVERSITY):
Bill Joy, Sun's chief scientist, Monday, 8 a.m.

JAVAONE CONFERENCE REGISTRATION & HOURS:
Tuesday, 6:30 a.m.–8 p.m.
Wednesday, 7 a.m.–6 p.m.

Thursday, 7 a.m.–6 p.m.
Friday, 7 a.m.–Noon

JAVAONE PAVILION HOURS:
Monday, 5 p.m.–8 p.m. (Special Pavilion Preview)
Tuesday, 10:30 a.m.–8:30 p.m.
Wednesday, 10:30 a.m.–6 p.m.
Thursday, 10:30 a.m.–4 p.m.

JAVA UNIVERSITY HOURS:
Sunday training sessions, 10 a.m.–6 p.m.
Monday training sessions, 10 a.m.–5 p.m.

Pushing the Java Applications
KL Group's servlet deploys, updates applications in real time

BY DAVID RUBINSTEIN

In a move designed to help development managers control software distribution across multiple platforms, KL Group Inc. this month expects to release DeployDirector, a 100% Pure Java servlet for the management of client-side applications and applets.

Jeff Zado, product manager at KL Group (www.klgroup.com), cited a report that shows the cost of deploying software to 5,000 PCs at 25 remote locations to be $527,500—factoring in costs of distribution, installation and help desk, as well as tracking the updates, time delay in getting new versions and fixes to end users and installing and updating the Java Virtual Machine (JVM) on which the application runs.

Zado said DeployDirector can deploy applications to thousands of users anywhere via a browser interface, using industry-standard protocols to provide the updates.

"Let's say a company has developed an internal sales application," Zado explained. "The salespeople, who are at remote locations, connect to a database. Well, what if a sales-

person had an old version of the application? Maybe prices had changed, and no IT person was there to update him. He'd be working with the wrong information."

DeployDirector, Zado said, updates the application on the server and can either send a message to the end user to get the update, or the update can be done automatically and silently.

With the use of Java on the enterprise level growing rapidly, Zado said, DeployDirector is designed specifically to manage multiple Java applications that might have different JVM requirements, allowing companies to use new JVM versions for development while ensuring that applications developed with previous JVMs will continue to run correctly. What all this does, Zado said, is to free up time for developers to work on business projects instead of trying to write deployment solutions, and allows enterprises to use applications they hadn't been able to in a cost-effective manner.

The deployment solution is an extension of KL Group's position in the Java community, Zado said. KL Group's products include JProbe, a

development tool set; and JClass, a family of 100% Pure Java certified JavaBeans.

DeployDirector supports any server that can run a Java servlet, including Solaris, Windows NT/2000, HP-UX, AIX and Linux. The supported

clients are Windows 95x and Solaris, with support for JDK 1.1 and higher. It requires 6MB on the server and 600KB on the client.

The starter kit, which includes a packaging component that creates Java archives (JARs) specific to the client's applications, is priced at $20,000 for one server, 100 clients and three days of instruction.

KL GROUP ADDS SUPPORT FOR BEA'S WEBLOGIC

KL Group and BEA Systems Inc. have partnered to deliver KL Group's JProbe Suite of Java performance analysis tools in conjunction with BEA's WebLogic Server 5.1.

It is available now, at $1,899 for a single developer license. Support for WebLogic 5.1 is at www.klgroup.com/jprobe/bea. ∎

Coming Down From Their Tower
JVM vendor sets up on-site performance teams

BY DAVID RUBINSTEIN

Surrounding the launch this month of its TowerJ 3.5 Java Virtual Machine, Tower Technology Inc. has secured a new round of financing and, under the leadership of its new CEO, is revamping its corporate strategy.

"We've changed our business model. We're moving toward direct sales to IT managers running those big server farms," said John Gustafson, who became Tower's CEO on Feb. 1. "Our economic benefit to customers is 'Twice the performance for one-fifth the price.' Instead of spending $20,000 on five new servers, spend $5,000 on our software."

Indeed, under Tower's Performance Improvement Quick Start program, if a Tower e-Performance Consultant can get a customer's application to run

twice as fast, the cost is $5,000, according to Gustafson. If they can get it to run three times as fast, the cost is $10,000. If they fail to achieve the desired rate of performance, though, there is no charge for the service.

Tower (www.towerj.com) is taking this rapid-response approach to its customers, but also is seeking to get involved at the beginning of the development cycle during application architecture and assessment, Gustafson said. "We have the skills in performance optimization techniques," he said, pointing to the fact that in the past four Volano Benchmark reports, TowerJ has been the leading JVM in terms of performance.

Gustafson said TowerJ is a post-compiler being positioned as a deployment optimization

solution, offering benefits of reduced complexity of managing Java components and applets, thereby reducing costs of deployment. The significant upgrade in version 3.5 is that it now supports Java 2 Enterprise Edition (J2EE).

Gustafson added that Tower could partner with system management vendors such as Computer Associates, Segue or BMC. "It's where we fit in the life cycle," he explained. "The beauty of what we have is the ability to develop on a single platform and develop on all eight platforms we support. That's attractive to large, multi-vendor environments."

Gustafson joined Tower from New Venture Associates, where he was an executive management consultant.

Under the financing plan, privately held Tower would get a $1.2 million cash infusion. Closing terms were not available. ∎

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Windows 2000/98/95/NT

DEVELOPERS WILL WRITE TO WINDOWS 2000, SAYS SURVEY

Windows 2000's time has apparently arrived for a majority of developers. That's the conclusion of an informal survey conducted by catalog merchant Programmer's Paradise Inc. at the SD 2000 Conference and Expo in San Jose in March.

Of approximately 600 developers interviewed for the Programmer's Paradise [www .pparadise.com] survey, 72 percent said they would be writing to the latest version of the Windows operating system within the next year. Twenty-eight percent said they would begin deployment within three months, 25 percent said they would begin deployment within six months, and 19 percent said they would deploy it within 12 months.

Contrast this to information culled from the survey that said only 41 percent of developers expect their employers to implement Linux within the next year. Indeed, 59 percent of developers said they either would not implement Linux (39 percent) or were undecided as to whether to do so (20 percent).

The informal survey offered no analysis as to how these results might reflect on or significantly impact the growth of the Linux developer base or of Windows 2000.

The survey also found that 69 percent of the 600 developers interviewed had purchased development tools online, excluding shareware. ∎

BroadVision Buys Interleaf

In a deal estimated to be worth $877 million, BroadVision Inc. has acquired XML content management company Interleaf Inc., and named former Interleaf CEO Jaime Ellertson to the newly created position of chief strategy officer.

BroadVision's One-to-One Enterprise—its signature suite of e-business components that includes a shopping cart, plus banking, billing and knowledge management applications—has been updated with Interleaf's technology, putting "our unique spin of XML" into the mix, Ellertson said.

"BroadVision provides a way to personalize the Web," Ellertson said. "You'll be less successful without personalization." BroadVision provides a rules-based engine and profiling for personalization, he explained. "They can serve up large amounts of data over the pipe," he said. "Now, with XML as the environment of e-business, it's a direction they wanted to go in."

XML Connection, which binds Interleaf's BladeRunner with BroadVision's One-to-One into an XML-based content management tool, was released 30 days after the purchase agreement was announced in January, Ellertson said. It is in rough implementation now.

In his new role as chief strategist, Ellertson said the company will continue to look for acquisitions in the service area, as well as at wireless and core technology areas that could "give us substantial differentiation," he said.

Ellertson said the largest potential market for Broad-Vision (www.broadvision.com) is wireless devices, as XML is the foundation for Wireless Markup Language (WML). ∎

VenturCom API Makes Windows CE Apps Portable

Free application programming interface enables ports to Windows NT, NT Embedded

BY EDWARD J. CORREIA

The inability to port their applications to other operating systems has long been a drawback to Windows CE developers—until now. Windows NT Embedded pioneer VenturCom Inc. has released the RTWinAPI, a Windows CE 3.0-compliant application programming interface that for the first time permits developers to port their CE applications to Windows NT or NT Embedded simply by recompiling, according to the company. The one caveat is that the target platform must run the company's real-time extensions.

"This is the only solution on the market offering any kind of portability between CE and NT," said Roy Kok, vice president of marketing at VenturCom (www.vci.com). "This is true because part of the solution involves making NT behave like CE. The RTWinAPI identifies the group of Windows CE function calls that we felt were most appropriate for real-time development, and it mirrors them on top of our technology inside of Windows NT."

VenturCom develops and markets RTX, a set of real-time extensions for Windows NT and NT Embedded, giving either operating environment the benefits of real-time operations. RTX adds a proprietary scheduler to Windows NT that can preempt the NT scheduler at any time. This gives real-time developers using VenturCom's development extensions with Microsoft Studio the ability to prioritize their mission-critical software and make Windows NT behave more deterministically, Kok said.

Developers of Windows CE applications will experience virtually no transition time to begin using the API because it includes only existing function calls.

According to Kok, developers will be able to leverage the wealth of applications and resources available with NT Embedded. "There are tons of software developed for the Win32 world, and people are wanting to leverage Windows technology any place they can," he said, describing the flexibility afforded by developing to a common platform. "In the industrial control marketplace, they need to have connectivity from robots and machine controls out on the plant floor to the IT systems in the front office, updating inventory and tracking projects."

And when enhanced with RTX, Windows NT offers developers more flexibility and control of their programs, including the ability to directly access the hardware. "Windows NT has a pretty complicated driver model that has been viewed as a

RTWinAPI makes NT work like CE, according to VenturCom's Kok.

negative by developers, [who] like to be able to write applications that can access hardware directly. Windows NT doesn't allow that," said Kok.

Real-time developers increase program reliability when writing to the separate NT scheduler in RTX, which can continue operating when NT does not. "We've all seen the Windows NT 'blue screen,'" he said. "If I have a software program running with VenturCom technology, that program will continue to operate even if Windows NT blue-screens. And that's really important to critical applications." The API is available now for free download at www.vcicenter.com.

VENTURCOM KICKS OFF VALIDATION PROGRAM

VenturCom has launched its hardware validation program, with Dynatem Inc. the first in line. A maker of stand-alone embedded hardware systems, Dynatem (www.dynatem.com) signed on to allow VenturCom to test its hardware and certify that it is compatible with its intended Microsoft operating

system. VenturCom hopes the agreement will be the first of many, with industrial computer maker Versalogic Corp. likely to be next, the company said.

"Hardware companies have too much to learn to be able to support all the different operating systems," said Kok. So VenturCom developed a program to partner with hardware companies in an effort to validate their hardware as appropriate for either of the Microsoft operating systems: NT Embedded or CE.

But the program goes beyond validation. "We'll even build a target for that particular hardware platform so customers have a good 'out-of-box' experience. If they have a customer that wants to use their particular hardware with Windows NT Embedded, VenturCom will have a target built for that particular platform and the customer won't have the learning curve associated with buying a piece of hardware [from one vendor], going to somebody else to buy a piece of software, and figuring out how it all works together," he said.

VenturCom also can provide OEMs with the licensing necessary for selling devices based on Microsoft embedded systems. ∎

WHERE MAINFRAMES MEET BROWSERS

Century's HostML, ViewML translate data for Web clients

BY DOUGLAS FINLAY

Developers struggling to reuse older mainframe host and Unix applications within the new Web-enabled environment may finally get the solution they're looking for, thanks to Century Software Inc.'s unveiling of HostML and ViewML programs at Comdex Spring 2000 that took place in April in Chicago.

Essentially, with both programs running on the desktop, HostML accesses mainframe applications via terminal emulation, using screen-scraping techniques to capture data, translate it into XML and stream it to ViewML for rerendering and ultimate presentation onto a Web browser.

"HostML is a terminal emulation technology enabling developers to run an IBM 3270, 5250 or Unix-based application, such as accounting, behind a firewall, using a secure link from a Windows NT server, and produce a DTD [Document Type Definition], storing it in an XML stream," said Greg Haerr, CEO of Century Software (www.centurysoftware.com).

"That XML [data] is then stored in disk files or piped over to the ViewML program, or client, which rerenders the XML data for the browser," Haerr continued. ViewML supports Linux, Windows CE, PalmOS, Java and ActiveX.

Haerr said the new Web environment quickly pervading the industry has given rise to developers who think specifically in terms of XML technologies and applications. "We've got XML databases we can now access with ease," he said, "but what is less available now is access to nondatabase applications," such as those on Unix and mainframes.

Using HostML, he said developers could expect to bring legacy applications to the desktop without the need to know terminal emulation programs.

Of equally compelling interest to developers will be the open-source implementation of MicroWindows included in ViewML, which enables developers to further port those legacy applications into smaller devices and systems, such as those running Linux, embed-

ded Linux and the Wireless Application Protocol.

An open-source project conceived and built by Haerr, and available for download at www.microwindows.org, MicroWindows is a "graphical run-time [environment] for Linux, embedded Linux, the PalmPilot and other new-age systems," he said.

He said ViewML sits on top of MicroWindows, which provides all the graphics routines using smaller memory space to run on the smaller devices. "Otherwise," he continued, "developers would have to run X-Window servers, which take up to an 8MB footprint."

In addition, he said developers could use MicroWindows to add a number of applications on top of their own programs. "Developers can render for their own needs. If a developer wanted an e-mail client on top of ViewML, he could add it," Haerr said, because MicroWindows supports such activity.

Both the HostML terminal emulator and ViewML rerenderer are slated to be released in August. Pricing has still not been determined. ∎

Applied to Make CodeTest For MontaVista Embedded Linux

In response to developer cries for better testing tools for embedded Linux applications, Applied Microsystems Corp. is partnering with MontaVista Software Inc. and will integrate its CodeTest debugging suite with Hard Hat Linux, MontaVista's brand of Linux for embedded systems.

Developers now will have access to a set of tools specifically designed for performance and memory analysis, code coverage and instruction trace, according to Mike Byron, manager of corporate communications at Applied (www.amc.com). "These significantly impact delivery and performance quality of development of applications for embedded hardware systems using Linux," he said.

Under the terms of the agreement, MontaVista (www.mvista.com) customers in

need of the tools will contact Applied to purchase CodeTest, which has been certified to work within the MontaVista environment. "We are extremely impressed with the integration and functionality CodeTest offers the embedded Linux developer," said Jim Ready, president and CEO of MontaVista, based in Sunnyvale, Calif.

Hard Hat Linux and its accompanying development kit are optimized for embedded applications and targeted at Internet appliances, communications devices and mobile computing systems that incorporate $x86$ and PowerPC processors. Suggested retail prices for CodeTest suite are $4,000 for the software-in-circuit version and $12,000 for hardware-in-circuit. The tools are scheduled to be available by midyear. ∎

MICROSOFT

The new division is a consolidation of the Windows CE and Windows NT Embedded development teams and the Server Appliances group, and will function as a platform provider for organizations both inside and outside the company.

The new group will be headed by Microsoft vice president Bill Veghte, former general manager of consumer Windows products. "Every element of this strategy is a response to the needs of developers in today's supercharged connected device industry," said Veghte.

"We've spent the past couple of months focusing on what Microsoft really needs to do to be competitive and successful in the embedded marketplace," said Deanne Hoppe, product manager of the embedded and appliance platform group. But despite being available since 1996, Windows CE has not gained much ground compared with other commercial RTOSes, which one skeptical competitor said is not likely to change. "Microsoft's track record doesn't lead anyone in the industry to believe that this new announcement will go any further than Windows CE or Embedded NT has," said Bill Weinberg, marketing director at MontaVista Software Inc. (www.mvista.com). "It's Microsoft's continuing investment in [its] 1 percent of the market."

But according to Hoppe, the company is gaining embedded ground. "We really have the largest R&D investment in the industry in the space, and if you look over the past six months, it was the most successful six months measurable in sales and design wins," said Hoppe.

Hoppe said she is optimistic about the potential for Microsoft in the embedded space, citing the company's new flexibility. And part of that flexibility will be centered around Windows CE 3.0, due for release in June. The update will have the capability to let embedded developers pick and choose the components they need and scale down the RTOS for their devices. "In the past, Windows [CE] has been thought of as a 50-pound bag of flour, and you had to take the whole bag," she said. "We need to break that up if we want to be in

appliances and devices." Windows CE 3.0 also will feature greatly improved determinism, with an increase in latency priority levels from eight in Windows CE 2.12 to 256 in version 3.0, she added.

"When customers start to consider building a device or appliance, they're also asking whether they can create a customized operating system that delivers just the functionality they need—no more, no less," Veghte said. "Version 3.0 allows developers to be more selective when they choose system capabilities." Developers will be able to boil Windows CE 3.0 down to about 300K, the company said.

The new strategy also includes an accelerated launch cycle for embedded systems following a release of the general operating system. According to Hoppe, Microsoft would traditionally release an embedded version of an operating system about 12 to 18 months after its general release.

"We are committing to close that delta to about 90 days," Hoppe said, which she admitted is aggressive, but added, "I think it's something we really need to do to be competitive in this space." The Windows 2000 Server Appliance Kit, which will enable OEMs to build server appliances based on an embedded version of Windows 2000, is scheduled for release this summer.

Along with the scheduled Windows CE 3.0 launch, Microsoft plans to release a new version of Platform Builder, which will now include Embedded Visual Tools, the environment used to build Windows CE applications and new components. A free evaluation version will be available for download. Prices for the new offerings have not yet been set.

But MontaVista's Weinberg sees the move as just another Microsoft marketing maneuver without much substance. "Microsoft has made a series of grand announcements and much less grand product offerings," he said. "In each case, [Microsoft] starts off from an 'almost-right' position, but without the technical and, in this case, the marketing smarts to carry each of them off. They are taking a number of under-realized technology thrusts and hoping that by winding them together they can have a viable solution." ∎

BSquare Will Be There for Windows CE 3.0

Tools developer shows new products, upgrades at WinHEC

BY EDWARD J. CORREIA

With the Microsoft Windows Hardware Engineering Conference (WinHEC) as the backdrop, embedded tools developer BSquare Corp. has released a bevy of new products and has made all of its existing products compatible with the forthcoming release of Microsoft Windows CE 3.0.

Among the updated releases are the Time Critical Extension for Windows CE, the real-time extension for CE that boasts single-digit response time; the CEValidator Application Tester, a code-testing utility that now also includes a module for the newly released Microsoft Pocket PC operating system; and CEValidator Platform Tester, which tests ports of Windows CE to hardware and is ready to test functionality that will be new to Windows CE 3.0.

BSquare also is preparing to unveil three new products, two of which came along with its acquisition of Blue Water Systems Inc. earlier this year. Scheduled for midyear release is WinDK Xpress Kit Suite for Windows CE, a set of development tools that will combine Blue Water's WinDK device driver development environment with BSquare's CE Xpress board support packages.

This grouping of features "will provide the marketplace

BSquare will combine Blue Water's tools with its CE Xpress Suite.

with a complete solution for bringing up their intelligent devices on Windows CE," said Bill Kyle, director of marketing for platform technology at BSquare. The company also

plans to release a version of CE Xpress for PowerPC processors at the same time.

Also inherited in the Blue Water deal was its WinRT-USB, a tool that gives developers the ability to control USB peripherals from within their Windows applications without using the Windows Device Driver Kit. The kit will offer support for Windows 98, 2000, NT and NT Embedded—"every Windows operating system except CE," said Kyle. The WinRT-USB toolkits will support development in Win32 C/C++ and will support Visual Basic and other application-level development environments through an ActiveX control.

Kyle also said that USB-related development efforts on one Windows platform will be portable to others. "What's interesting about the approach we take is that the source code is going to be compatible with Window 2000, so if organizations decide they want to migrate over to Windows 2000, they just need to recompile the code and they're up and running on 2000."

BSquare is introducing a single WinRT-USB developer license for Windows 98 and 2000 for $1,495, which will include six months of product technical support and free run-time licenses. The Windows NT and NT Embedded version will initially be priced at $1,795 with support plus 100 free run-time licenses. An optional one-time buyout program is available for $25,000 per peripheral. WinRT-USB is scheduled for release in May.

Finally, the company confirmed its embrace of the Bluetooth specification for wireless communications between small-form-factor devices with a demonstration at WinHEC of a shopper's assistant application running on a Web pad and communicating wirelessly with a Windows NT server. Bluetooth (www.bluetooth.com) is an industry consortium intent on driving the development of the technology. ∎

PERSONALJAVA COMES TO CODEWARRIOR

Rapid application development tools speed products to market

The army of developers using CodeWarrior to build applications will have yet another platform to add to their arsenal. Metrowerks Corp. has unveiled CodeWarrior Personal-Java Platform Edition 1.0, which puts applications for set-top boxes, Internet appliances and handheld computers within easy reach of Code-Warrior programmers.

Adding PersonalJava to the environment will open up a new world of opportunities for Code-Warrior developers. "By adding support for PersonalJava technology to CodeWarrior, we are providing the Java developer community with the tools they need to extend Java's cross-plat-

form benefits to the consumer device space," said Luis Quiroga, product marketing manager at Metrowerks. PersonalJava is a subset of Sun's Java 2 Micro Edition (J2ME), which provides an optimized Java run-time environment designed for consumer-oriented device solutions.

Applications created with the technology can execute on any device on which a Personal-Java virtual machine is present. Networked devices also can access class libraries, giving programmers the ability to create applications that leverage features of the Java 2 Standard Edition. Metrowerks declares a following of around 200,000 developers using its cross-plat-

form integrated development environment, which provides a unified C, C++, Java and assembly language interface for developing desktop and embedded applications for Linux, Macintosh, Solaris and Windows, plus a number of embedded platforms for a variety of processors.

CodeWarrior PersonalJava Platform Edition 1.0 is available now directly from Metrowerks (www.metrowerks.com) for $549. The package includes a Java compiler, rapid application development for the abstract windowing toolkit GUI library, a Java application validation utility called JavaCheck, a target emulator and a Java project template. ∎

JAVA

requirements are too restrictive and expensive. Some find having to co-brand their Java products with Sun difficult to swallow.

"What we have seen is that Sun in its JCP has put together a system that we have characterized as hub and spoke," said Dana Marks, Hewlett-Packard Co.'s program director for Java technology and marketing. "They're at the hub, and the licensees are at the end of the spokes. Our information flows directly into Sun, and it flows back out to us. But it's what they want us to know and they're controlling the specs, and it's less egalitarian than we'd like to see," he said.

Sun is the best steward for Java, said Sun's Roth.

"The licensing is where part of the problem starts to arise," Marks added. "Suppose I as a vendor come up with a good idea. I show it to Sun, they accept it, and then charge us to license it back."

Sun vigorously defends its position on Java. "I believe Java is a vendor-neutral process," said Bill Roth, Sun's group product manager for Java 2 Enterprise Edition (J2EE), "and continued scrutiny will make sure Java remains a viable, vendor-neutral platform. I think it's disingenuous for vendors to carp in the press when they could be working with us to move Java forward."

Smaller partners have no problem co-branding with Sun, reaping the benefit of dropping the name to their customers. "I call it wrapping yourself in the cloak of respectability," HP's Marks said. "They run a full-page ad, and if you recognize one name on the page, it will be Sun, not some e-dot something or other. They're looking for that partnership and association."

The brand is the seal of approval for Java use, said Sun's Paolini.

MONEY....OR BRANDING?

IBM Corp.'s director of e-business marketing, Scott Hebner, questioned Sun's bottom line. "If they're not making money with it, why not contribute it to an open standards body? If you look on the Internet today, the No. 1 standard for HTTP [servers] is Apache, which is open source. The No. 1 operating system for app servers is Linux, which also is open source. There is no reason Java would not fit this mold. And, innovation in Apache and Linux is outpacing Java. The quality is higher than in most commercial products."

Sun, however, says that it's not about money but control. "It's been suggested that Sun should set its prices on Java so that it breaks even," said Roth. "I guarantee you that if we did that, our prices would go way up."

Sun's harshest Java critic has been IBM. According to Hebner, IBM believes the Internet by definition must be a set of shared standards that are vendor-neutral. "What we do not want to see happen is the Internet become a battleground for vendor-specific control points," Hebner said. "It obviously doesn't benefit any vendor if the world is based like back in the early '90s where you had to make a decision on an operating system, or programming language, that locked you into the control of one vendor."

The problem starts with licensing, said HP's Marks.

But more than money, the branding issue may be the biggest sticking point between the two industry giants. Sun's Roth laughed, "[IBM chairman] Lou Gerstner woke up one day and his people told him, 'We don't own Java.' They've got 100 products that rely on Java, and in fact, their mortal enemy in hardware owns it. It probably made his head explode."

But, IBM's Hebner looked at things differently. "If something is controlled by one vendor at the expense of others, they have established a control point. It's not good for other vendors, or the overall economy, if branding becomes an important issue. If your product is based on J2EE, it must be branded Sun. Anything that uses Jini technology must be branded Sun. Any storage device that uses Jiro technology has to be branded Sun. Before you know it,

they're controlling the brand of the Internet."

It appeared that Sun tried to appease its critics when it began working with the ECMA standards organization. But Sun claims there was a discrepancy over who would use the copyright. "We use [the brand] as our seal of approval for those who have passed the compatibility test," Paolini said. "We felt abdicating that would cost us a mechanism to control compatibility."

For its part, ECMA claims it does not know the reason Sun has not made the specification available for standardization. ECMA secretary general Jan van den Beld explained in a written statement: "The Sun delegation promised to make the spec available at the [ECMA Technical Committee] meeting, but less than one hour before the end of the meeting their standards director Mr. Carl Cargill came into the room saying that Sun lawyers would like to spend some more time on IPR [intellectual property rights] before making the spec available. Despite several requests about the nature and contents of a possible IPR problem, ECMA has never got an answer. So, we do not know what the problem(s) is (are).

"It cannot be the copyright of Sun's own specification is at stake because such copyright is not touched by ECMA," continued van den Beld. "It could be that Sun does not want to make the Java specification publicly available—a standard is per definition something under public control—because by that they might lose control. This would be rather simple, naive and late timing to become aware of this 'risk' because this had been already considered, and known, for more than three years in Sun."

He added, "One could say that Sun has not really behaved like a gentleman with respect to ECMA, where ECMA has gone through a costly process which has been abruptly killed by Sun without any reasonable justification or explication."

EVOLVING THE PLATFORM

All parties to the JCP interviewed admit there are problems with Java's going to a standards

EDITORIALS

Beware the Back Door

The story broke, as computer security stories often do, as a stop-the-presses headline: Microsoft Corp.'s programmers had placed a "back door" into the company's FrontPage Web-server extensions, which could be surreptitiously activated by a key phrase calling Netscape engineers "weenies" (see story, page 1).

The daily papers rushed to print with accusations, but a week later, amid a flurry of confused and somewhat contradictory denials from Microsoft spokespeople, the story settled down to rumor, innuendo, accusations and counter-accusations. Back to business as usual.

Our point here isn't about the obfuscation and delays in this particular situation. After all, a few bad apples have been writing back doors into corporate applications for decades. There's even a tacit acceptance of "intentional undocumented" features in shrink-wrapped applications, such as Easter eggs. There's a less cute name for another type of undocumented feature: time bombs.

The broader message is a warning for our entire profession: You can't trust that there won't be back doors, time bombs or other dangerous code in your company's applications, not unless there's a strong policy of source review, as well as tools that can detect unauthorized changes to previously approved source files.

It's only going to get harder. Distributed objects provide systems where not all of the components of an application are on the same server—or even on the same LAN—and there's often no guarantee about the integrity of the objects or components your applications access.

The story should serve as a wake-up call to development managers, especially when code is tested by the same programmers who write it.

Linux Grows Up—And Up

And they said that Linux wouldn't scale. How about taking Linux apps that run just fine on, say, a 400MHz Pentium II-based server with 128MB RAM, and migrating them to IBM Corp.'s 12-way S/390 G6 XZ7? As discussed on page 23, Linux for the biggest, baddest mainframe is under serious development by IBM.

Between IBM's mainframes and Linux running on Sun Microsystems Inc.'s 64-way Enterprise 10000 Starfire server, there's no doubt that this grass-roots operating system is going to offer new challenges not only to its archenemy, Microsoft's Windows 2000, but also to traditional high-end systems such as IBM's OS/390 and AIX, and Sun's Solaris.

Even for organizations that wouldn't consider using an S/390 as a Linux server, broader acceptance of Linux as a scalable solution can only increase the operating system's viability in the market. With a wider array of platforms to run on, more independent software vendors will port their enterprise solutions to Linux. With more enterprise solutions from well-known firms, CIOs will be willing to take a gamble. And with the CIO's backing, more home-grown Linux projects will be started.

It's an organic cycle that most hardware and software vendors (with one notable exception) will encourage. Perhaps after the April market crash, profitless Linux start-ups won't have sky-high market valuations, but that doesn't mean that Linux won't be good for everyone's business. ∎

IF YOU BUILD IT, WILL THEY USE IT?

Have you ever tried to use a piece of software that has all the right features but is simply too annoying, frustrating or inconsistent to use? Been turned off by typos on an on-line vendor's Web site? Been angered when you've read error messages that say, "Your application has crashed, and all work has been lost," and been forced to press "OK"? I sure have, and so has Jeff Johnson, author of "GUI Bloopers." I often give such software or Web sites negative reviews—but Johnson has done something more: He has developed a very informative book that should help you and your team avoid these and other common user-interface design and implementation errors.

BOOK WATCH

ALAN ZEICHICK

Johnson's approach is a good one: He has abstracted his vast collection of user-interface gaffes into a series of design principles, many of which are presented with either real illustrations from shipping software products or live Web sites, or from fabricated examples that make his points clearly.

The primary audience for the "GUI Bloopers," says Johnson, is the working developer creating applications without the assistance of a professional UI designer; the secondary audience is the software development manager. I would recommend managers as the primary audience; very few developers are competent enough to create compelling user interfaces without management oversight. After all, interface design is *not* a technology issue: Even when software tools include GUI builders and wizards, that's no guarantee that the results will be optimal.

The book divides the bloopers into eight broad categories. Some are extremely basic: In the section called "First Principles," Johnson urges developers to focus on the function of the application first and determine its interface presentation later, and to remember that old-time adage that the screen belongs to the users (i.e., the application should not move the cursor or its windows) and the like. There's no excuse for forgetting the basics.

More concrete guidance is given to coders in the next few sections, which cover the design of components such as menus, check boxes and radio buttons, as well as the layout of windows and dialog boxes. Blooper 1, found on page 62, urges developers to avoid dynamic menus. The functions under "File," "Edit" and "View" should never change within an application; an inappropriate command should be grayed out, not removed from the display. Forgetting to put in keyboard shortcuts, or using nonstandard shortcuts (Ctrl-S is a de facto standard for saving a file, Ctrl-P for printing), is another no-no.

The author spends a lot of verbiage reminding readers of the correct way to use check boxes (for single on/off choices) and radio buttons (when exactly one choice out of a field of multiple options is permitted). Granted, many applications misuse the basic GUI widget set, but Johnson appears to be bogged down with that particular detail. He similarly is dismayed by the abuse of non-editable text fields, actions that happen on mouse-down rather than mouse-up, and arbitrary lengths of input fields.

Johnson also dislikes the use of technical jargon (he calls it "speaking geek") in command and error messages. What should an end user make of an error message that says "type mismatch," or a request for a user to "authenticate" his session, or references to "strings" and "exceptions." Ambiguity is another problem: The developers of an application know the difference between its "find" and "search" features, but would the ordinary application user? Probably not.

Those UI bloopers, though annoying, won't impair a worker's efficiency. That's not necessarily the case with Johnson's sections on interactivity and responsiveness bloopers. For example, Blooper 46 covers the common practice of overwhelming users with decisions and details—if there are too many options on a menu or dialog box, the user won't know which to use and what their effects might be.

That is particularly evident when important and minor options are presented without any emphasis that helps the user decide what to study and what to ignore. The advice Johnson offers: Label options clearly, group related features together, use "Advanced" settings boxes for less-frequently-used choices, and make important controls larger.

One short chapter in "GUI Bloopers" is devoted to Web bloopers and, frankly, it only hits the tip of the iceberg. Yes, he's right, the "Back" button should always take browsers back to where they were before—too many sites trap users inside their menus. Yes, search engines generally are pretty bad. Yes, many pages are too large and poorly orga-nized. Yes, designers often use the wrong Web graphical widget. But if you are primarily looking for Web-site design advice, check out Johnson's recommended Vincent Flanders' www.webpagesthatsuck.com or Jakob Nielsen's www.useit.com.

Chapter 8 focuses on what Johnson calls "management bloopers." In it, he berates organizations for placing user-interface design too low on the development priority list, not understanding what user-interface professionals do, and failing to either do enough user testing or to follow up on the results of such tests. He's right: When it comes to the creation of in-house applications, few development managers that I've spoken with give much consideration to fine-tuning the interface design. UI decisions are too often made by the developers on-the-fly, perhaps with suggestions coming from a single line-of-business manager. It's no wonder that end users are frequently unhappy with their applications, or worse, find them so difficult to use that their efficiency is impaired.

"GUI Bloopers" is a fine book, good both for developers to use when they are building their applications and for the managers and testers to study when they are evaluating their applications. Johnson's collection of bloopers will raise awareness of what can go wrong with an application—and his related set of design principles should help developers avoid those mistakes. Strongly recommended. ∎

"GUI Bloopers." Jeff Johnson. Morgan Kaufmann, 2000. Trade paper, 559 pages. $44.95.

LAST CHANCE

LETTERS TO THE EDITOR

MONGOOSE 'PROOF' OF DNA BENEFITS

We appreciate the coverage you gave to Mongoose in the April 15 issue of *SD Times* ["New Products, Upgrades at SD 2000," page 1]. We do not consider Mongoose, our packaged DNA development framework, to be "functionality that Microsoft forgot," as stated in your last issue. We consider Mongoose to be a proof statement to Microsoft's Windows DNA platform and all of the benefits it promotes in terms of functionality, productivity, performance, scalability and low cost of ownership, and we're very appreciative of the staunch support Microsoft has put forth thus far to promote Mongoose.

John Mansour
Vice President of Marketing
e-Mongoose Inc.

WHAT DO YOU THINK?

SD Times welcomes feedback. Letters must include the writer's name, company affiliation and contact information. Letters may be edited for space and style and become the property of BZ Media.

Send your thoughts to letters@bzmedia.com, or fax to 516-922-1822. Please mark all correspondence as Letters to the Editor.

Who Are the Real E-Developers?

E-business is driving changes in developers, development processes

BY JENNIFER DEJONG

It seemed like only yesterday, when Web applications did little more than deliver static pages. The company Web site published the annual report and posted a press release when news broke, providing the basic information that customers and investors needed to know.

And even as sites evolved, allowing customers to do things such as check the status of merchandise ordered offline, Web-enabled applications—where the server talks to a Web interface and to a back-end database—were tough enough to handle the task. "In the beginning, simple solutions seemed like the answer," said John Capobianco, senior vice president and chief marketing officer of Bluestone Software Inc. (www.bluestone.com).

But that was before e-business boomed—before it was commonplace for companies to sell goods and services online, packaging their wares among how-to advice and product reviews geared to helping consumers decide what to buy. "Very few companies started out conducting big business on the Web," said Capobianco. But when they did, they found themselves pushing the limits of Internet-enabled applications. "When your site gets tens of thousands of hits per second, you find out your limitations fast," he said.

THE NEW E-DEVELOPERS

To remedy that situation, vendors are delivering a new breed of sophisticated Internet development platforms. Designed to support the way e-businesses buy and sell goods and services and to facilitate the way they communicate with customers and partners, e-business development platforms are essentially standards-based sets of tools and services tightly integrated around an application server.

Although products vary from vendor to vendor, e-business development platforms share some common attributes, according to analyst Daryl Plum-

mer, group vice president for Internet and e-business technologies at market-research firm GartnerGroup Inc. Built around the application server infrastructure, they are based on Web standards (HTTP, XML, Java, JavaBeans) and provide tight integration with applications inside and outside company walls, taking data from one source and delivering it to another. In addition, they offer commerce components, such as shopping carts and taxation modules, and personalization services, allowing an e-business to tailor content and product offerings to individual consumers and partners, based on stated and implied preferences. And, depending on the vendor's orientation, the new e-business development platforms offer special services, such as content management, according to Plummer.

As the market for application servers morphs into a market for e-business platforms, Plummer said, this technological shift mirrors the changing business landscape. "Enterprise class computing has evolved to global class computing," said Plummer. "The enterprise is only one piece of the pie. You have to be able to integrate with multiple partners outside the company."

What's more, said Bluestone's Capobianco, you have to be able to reach your customers—to be able to serve [information] back to them, regardless of what [kind of client] they come in on. "It's not just the browser you are talking to. It might be a partner's inventory system, a PalmPilot or a Web-enabled cell phone," he said.

Bluestone's Total-e-Business platform, which powers sites such as Food.com and CDbeat .com, includes five editions: B2B, Application Server, B2C, Wireless and Global Editions, as well as a new Syndication Server.

Given the ever-expanding

The e-developer is really the e-team, said IBM's Olague.

In the beginning, simple solutions sufficed, said Bluestone's Capobianco.

enterprise, it's no surprise that tight integration and standards are the key concepts behind e-business development platforms. Unless such tools and services are well integrated with the application server, the products are too tedious for customers to use, said Valerie Olague, program director of business transformation product marketing at IBM Corp. The company's WebSphere e-business development platform serves as a foundation for integrated services, Web site services and IT services; and also includes commerce capabilities for both business-to-consumer and business-to-business markets.

Strong integration of such tools and services is critical—especially when you consider that virtually all companies (other than brand-new dot-coms) are already contending with systems made up of many disparate parts, glued together with intricate programming. "Customers expect an e-business platform to be reliable and standards-based," said Olague. "They are looking for the next level of services that make it easier to build apps and to differentiate themselves from their competitors."

Because e-business needs are constantly evolving—Web sites are continually adding new services or product offerings—the development platforms on which they are based must be flexible. "You need to be able to take the pieces of the systems apart and easily put them back together," said GartnerGroup's Plummer. While Web-enabled systems require sophisticated programming in order for the pieces to talk to each other, the components of an e-business platform can be attached and detached like Velcro, he said.

MARKET PRESSURES

That ability to take things apart and put them back together not only addresses the technical limitations of earlier generation systems, it also helps dot-

com companies cope with the two biggest business pressures facing all Internet start-ups: the lack of time and the shortage of programmers. In a very real sense, e-business development platforms are designed to do that.

"The new software development life cycle is impacting everyone," said Dave Rosenlund, senior director of product marketing at Rational Software Corp. (www.rational.com). "Software engineering teams used to argue over time frame vs. quality. But those days are long gone. Now you have to build it right and build it fast," he said. "Whereas 'fast' once meant 6 months, in the e-business world that could mean overnight."

A leader in the software development life-cycle management market, Rational makes tools and offers services that help e-business developers improve quality and increase their time-to-market.

In order to meet such deadlines, e-business players need to take a collaborative, team approach to getting Web applications to market. E-business development platforms are geared to working this way. "The e-developer is really the e-team," said IBM's Olague. A development effort encompasses an array of roles—not all of them programming. They are broken down according to the skill level and to the role that each team member assumes, she said.

For example, a business analyst, not a programmer, would be responsible for developing the business rules that are required to make a simple loan-approval application work. That would mean mapping out the activities and steps involved in determining whether an applicant qualifies for the loan, then handing off that information to the programmer, who in turn incorporates those rules into the application. "You don't need to be a hard-core developer to [create the business logic]," said Olague.

The programmer shortage won't end soon, said SilverStream's Daniel.

The role-based approach to Web application development also allows a company's marketing executives to have their say early on, as to how the Web site will cater to specific customers. On a content and commerce site, that would mean, for example, defining the rules and conditions that govern the delivery of personalized content. A marketing professional might specify that users who bought dog food five times be served up feature articles of special interest to pet owners. Or that customers who in the past bought baby gear be offered a special on disposable diapers in the future.

Not only does that allow marketers to increase sales by gearing offers to users' stated and implied preferences (and to change those rules easily and often), but it also makes more efficient use of the developer's time. That helps companies cope with the programmer shortage.

"I don't want a Java developer manipulating rules all day," said Keith Daniel, vice president and general manager of e-Business solutions at SilverStream Software Inc. (www.silverstream .com). "I'd go broke [if I let them do that]. Java programmers cost 100K," he said, adding that he doesn't see the shortage ending any time soon.

The SilverStream e-Business Platform, which powers portal sites such as www .charlottestreet.com, is composed of the SilverStream Portal Framework solution, the SilverStream xCommerce product line and the industry-standard SilverStream Application Server.

FOUNDATION FOR BUSINESS

In a sense, the rise of the Internet—and the advent of e-business development platforms—has changed the very nature of developing software, moving it into the mainstream in a way that few could have imagined even a couple of years ago. "Every company is a software company," said Rational's Rosenlund. "More companies depend on software more than ever before."

Dramatic changes have come about in an astoundingly short time, said IBM's Olague.

XML Boosts B-to-B Commerce

Data, metadata schemas provide a common information exchange

BY JENNIFER DEJONG

B-to-B may be the buzz among dot-com investors, but before the Internet emerges as the universal business exchange, where any partner can potentially trade goods and services with any other, a not-so-trivial detail still stands in the way.

The players must agree on a common language, a way of allowing their systems to talk to one another. In the broadest sense, that common language is XML, the emerging Internet standard for sharing data between applications. By making it easy to exchange all types of information, XML (Extensible Markup Language) has the potential to dramatically increase efficiencies among trading partners, allowing a buyer and supplier—say a PC manufacturer and a maker of circuit boards—to seamlessly execute purchase orders and invoices over the Internet.

Players must agree on a common language, said SilverStream's Holahan.

"XML presents a new way of describing data exchange. But [when it comes to B-to-B commerce], the problems are still there," said Fred Holahan, vice president and general manager of the B-to-B commerce division at SilverStream Software Inc. (www.silverstream.com). "Trading partners have to hammer out a common vocabulary."

To do that in XML, it is necessary to create XML interfaces to both systems and set up an application server on one side or the other to keep them in sync. Of course, for this to work, both companies will have to agree on a standard Document Type Definition (DTD), which defines things such as (in the case of the PC maker and board manufacturer) order numbers, item numbers, bills of materials, and other data commonly appearing on a paper-based purchase order.

That's easy enough. But what happens when, inevitably, the PC maker wants to work with additional partners? Doing so would presumably require the adoption of a common schema—a uniform way of formatting information for exchanges within that industry, potentially allowing any player to join the trading circle. But with hundreds of industries, both vertical and horizontal, relying on XML to implement B-to-B commerce, agreeing on such details is a daunting task.

NO NEED FOR CONSENSUS?

"You are never going to get the WalMarts of the world to agree on exactly what [information] belongs on an invoice," said David Turner, XML product manager at Microsoft Corp. "There is certainly going to be a proliferation of schemas—it's hard to know [which partners in which industries] have begun doing what," he said.

The notion that so many companies are implementing their own schemas sounds like a nightmare. But, according to Turner, it's not. "It means they are stepping into the game—they are already into the next generation of e-commerce."

The real reason he's not worried about multiple schemas is that he and others don't believe that gaining consensus—at least on the schema level—is the way to go. As the industry strives to figure it all out, what's emerging is not so much a big-time battle, but some baseline standards (often industry-specific) that would define common documents, along with sets of tools that make it easy and quick for trading partners to transact business even when they use different schemas.

"For XML to work, we need a baseline set of standards. For it to fly, we need [the tools] to extend those standards on a partner-to-partner basis," said SilverStream's Holahan.

Holahan and others expect to see a small number of widely accepted baseline standards take hold. Some, such as RosettaNet, dedicated to development and deployment of standard electronic business interfaces, are horizontal. Others are geared to vertical industries, such as the FpML (Financial Products Markup Language), recently proposed by financial industry leaders J.P. Morgan and PriceWaterhouseCoopers.

IBM Corp. recently proposed the tpaML (Trading Partner Agreement Markup Language), a high-level framework that defines how XML-based TPA documents capture the essential information upon which trading partners must agree in order for their applications and business processes to communicate. IBM

Microsoft's Turner said he is not worried about multiple schemas.

hopes the standard will emerge and grow as other vendors lend their support and add their input, said Bob Sutor, IBM's program director for XML technology.

Broad standards will allow B-to-B players to tap into the true power of XML. "One of the powerful benefits of XML is that once you have all your data following the syntax rules of XML, you have put it in a form that is easy to transform," said Turner. "I can take two invoices from two trading partners—as long as each invoice includes the information we need to do business. It's easy to transform it."

Once partners agree to a baseline standard, schema editors and mapping tools will make that happen. Such tools are in the very earliest stages. Microsoft's version is built into its forthcoming BizTalk Server 2000, part of the company's Windows DNA 2000 platform for building and deploying Web applications. BizTalk is expected to ship by the end the year.

SilverStream's answer is xCommerce, a family of XML integration server products that lets business analysts and developers build and deploy B-to-B e-commerce applications. Due to market in June, xCommerce is a part of the SilverStream eBusiness Platform.

XML will enable more players to enter the supply chain, said IBM's Sutor.

A host of other similar tools is expected to emerge this year. Their importance for B-to-B commerce can't be underestimated. Partners won't have to agree on an exchange format to communicate, said Holahan.

IT ALL GOES BACK TO EDI

To appreciate XML's flexibility—and understand its implications for trading partners doing business on the Internet—it's helpful to compare it with Electronic Data Interchange (EDI), the proprietary protocol buyers and suppliers have relied on to exchange electronic information for years. "From a B-to-B commerce perspective, XML is not the testing ground. The initial testing ground was EDI," said Holahan.

Ninety-eight percent of the Fortune 1,000 have adopted EDI in some fashion, said IBM's Sutor. "Over the years, it has saved them significant sums of money, compared to the paper-based way of implementing purchase orders," he said.

Despite its widespread adoption, EDI was an extremely rigid format. "You had to fill in information in a particular place [making it very difficult to alter documents]," said Sutor. Expensive and time-consuming to implement, the only way to integrate EDI exchange formats was through massive programming efforts, said Holahan.

"EDI arrangements were based on programming interfaces," said Microsoft's Turner. "You had to have a smart IT guy talking to another smart IT guy." That was expensive. "Without having to hire an army of programmers, it's cheaper and more efficient to do business," said Holahan.

What's more, EDI often put the little guys at the mercy of the big guys. Once you get outside the Fortune 1,000, only 5 percent of companies adopt EDI, according to Sutor. "It's too expensive to maintain and support the supply chain at small levels."

Here's how that worked. A small supplier of, say, china and silverware, which sold its wares in a major chain of department stores, was routinely forced by that store to purchase that store's custom EDI system just to continue doing business. These systems are proprietary—you couldn't use one buyer's system to connect to another's—and quickly run into tens of thousands of dollars. So, a small supplier could probably afford to launch a single EDI effort. That effectively prevented it from doing business with more than one partner. "The big players dictated everything," said Holahan.

By contrast, XML-enabled B-to-B commerce levels the playing field. Of course, the big buyers will still stipulate which schemas they want to use to exchange data. But now, said Holahan, the little guy can say: "We know you rule the world. But [it's no problem] to send back the info in the format you require."

In the long run, because it is relatively inexpensive to implement, XML-enabled B-to-B commerce will bring more players into the supply chain, resulting in lower prices and a larger choice of vendors, said Sutor.

Ultimately, that will allow arbitrary companies to set up relationships in an ad hoc fashion. "You didn't have to know me yesterday in order for you to do business with me today," said Turner. ∎

E-DEVELOPERS

"A few years ago, an e-business platform was nothing more than an application server with a Web interface," she said. That's what it meant to be an e-developer. "Now we moved from basic Web-enabling to full-scale Web application servers," she said. In effect, today's e-development platforms have created a foundation on which to build a business.

Olague's dealings with prospective WebSphere customers bear that out. "They never ask what level of what JDK is being implemented," she said. Instead, they want to know what the development platform will enable them to accomplish from a business perspective.

What can we expect in the future? The e-business platform will continue to add new capabilities, providing every conceivable business function across sales and marketing, distribution, manufacturing and development. "Just five years ago, without the Web and without standards, none of this would have been possible," said Olague. ∎

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PKI Environment Lightens Up Under Java

RSA Security's Cert-J reduces weighty requirements

BY DOUGLAS FINLAY

Independent software developers will be feeling just a wee bit more secure with the release of RSA Security Inc.'s RSA BSAFE Cert-J Java security program. According to RSA, the Cert-J program will allow developers to more easily write security applications for the PKI Keon and VeriSign Inc.'s OnSite environments, and then deploy them across all platforms used by multiple vendors.

With this new interoperability slant, RSA (www.rsa.com), in debuting Cert-J at its European conference in Munich, further looks to solve the dilemma developers face in writing security applications by protecting them from customers who incorporate a variety of public-key infrastructure vendors to create secure environments.

Kathy Kriese, product manager at RSA, explained that writing for the public key infrastructure (PKI) environment is currently fraught with difficulty because "companies are known to acquire other companies." She said, "If an organization has a PKI system it has implemented with one vendor and it acquires another company using PKI from another vendor, the developer will put in a lot of extra effort to get the new application to work across the enterprise."

Adding to the complexity for developers, she said, are companies using PKI to work with customers, suppliers and vendors in extranet environments who themselves may use other PKI vendors to implement security measures. If vendors' partners have not used the same PKI vendor for certificates, she said, developers will have problems understanding the certificates. "There are some things PKI vendors have done that are proprietary, rather than follow standards, making interoperability much more difficult," Kriese said.

But RSA claims that Cert-J reduces both the effort and expertise required to write to the PKI and VeriSign security environments, while getting the applications out across the enterprise in timely fashion. Kriese said that, normally, for developers to enable applications in PKI, they are required to know certificate management protocols, network protocols and cryptography, for example. But Cert-J greatly reduces the need for such a knowledge base, freeing developers to concentrate on the application itself. "They can add our code into their application, recompile their program and work it to be a secured application," she said.

In addition to providing for multivendor interoperability, Cert-J offers native support for the Certificate Request Syntax protocol, or CRS, making it easier to request, retrieve and revoke certificates when in the VeriSign OnSite environment. Kriese said the CRS consists of a request identifier, a template of certificate content and an optional sequence of control information. ∎

JAVA

body, with perhaps the biggest drawback being the slow process for change.

"We've gone from a simple language and run-time platform to more than 80 new APIs and a full-blown platform," said Sun's Paolini. "We did this working with the community." And Roth added, "We believe we are best positioned to be Java's steward. The pace of innovation of Java would come to a screeching halt. We have an innovative process for developing technology at market-relevant speeds."

Sun claims its upcoming modifications to the JCP, version 2.0, will address many of the issues its licensees have. Paolini said changes in the decision-making process will be the highlight of the revised JCP, which was due out late last month. Moving forward, he said, J2EE will be reviewed by the JCP's executive committee, and partners will be able to develop new functionality to the platform and reap some compensation for having done that work. "These companies will [develop the platform] to lead the market and gain expertise, and will probably develop a competitive product on top of that," Paolini said.

"We will not do it in an autocratic fashion." Roth said, "Java is a communi-

ty, a lifestyle, a belief system. There's more to Java than trying to make a buck."

While David Johnson, business manager and vice president of marketing for Computer Associates International Inc. (www.cai.com), said he would not be surprised to learn that Sun is losing money on Java development, he also said Sun is "not in it for purely altruistic reasons. The platform [Java] is helping to push their hardware line. What they gain in speed of development is that you need more hardware to drive it.

"There is a kind of parallel with Microsoft," Johnson continued. "There was a sense that when Microsoft was developing a new API for its operating system, they gave their own application developers a head start to develop to that API. With Sun in the lead, are they taking advantage [of Java growth] to put hardware components in place before anyone else can?"

Lee Garrison is director of business development at KL Group, a new member of the JCP. As such, it comes to the table with an unjaded view of the process.

"Sun must decide on whether [Java] will be proprietary or a standard," Garrison said. "They can't sit on the fence. We believe there should be cooperation on standards and competition on implementation." ∎

HELP DEVELOPMENT SUPPLEMENT

You Can Raise Your Application's Usability Without Writing Any Code

Do you want to raise the usability of your applications without having to write any code? A high-quality, full-featured Help system is the answer.

It's been said that an application can never be better than its Help system. But for some development teams, the user assistance that accompanies their application is an afterthought. They assume that their code can stand on its own and that the application's interface is so easy to use that additional Help and assistance for their users isn't really necessary.

❝ RoboHELP will end up saving at least 6 months of manhours over the planned 18-month lifecycle of our project. ❞

However, this is definitely not the case! Studies show that 80% of end users use the Help system and printed documentation when learning a new application, making the Help and documentation critical to overall usability.

If you want to improve the quality of your Help and documentation, then you'll want to take a look at RoboHELP. It writes all of the Help file code for you. Despite all of the changes in Help formats in recent years, RoboHELP Office remains the industry standard in Help authoring.

"We chose RoboHELP Office for its superior reputation and industry standard Help authoring capabilities. RoboHELP will end up saving at least 6 months of manhours over the planned 18-month lifecycle of our project. Our senior level management personnel have been more than impressed with what's been delivered and they're very excited about the possibilities of our finished product," said Steve Winnicki of American Pad & Paper Company.

RoboHELP's powerful functionality makes creating a full-featured Help system fast and easy. In fact, it's used by developers at companies like Symantec, Intuit, Adobe Systems, Hewlett Packard, General Motors, Johnson & Johnson, American Express and many more organizations of all sizes.

RoboHELP is a first rate tool for authoring all Help formats, including Microsoft HTML Help and WinHelp, Sun's JavaHelp, and eHelp's WebHelp. It even generates printed documentation directly from your Help project for manuals, tutorials and training guides. Check out RoboHELP Office 2000 for yourself. The latest version is packed with tons of new features.

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Free HTML Help Starter Kit

If you want to start creating HTML Help systems now, then take advantage of a unique offer from eHelp Corp.

They're giving away a free HTML Help Authoring Starter Kit to developers, technical writers, documentation specialists and anyone else who wants to learn how to create HTML Help.

Valued at $499, the starter kit contains a free 15-day license of RoboHELP 2000 for Microsoft HTML Help, an industry report on Help authoring and a sample WebHelp file.

It's free. You can get your own copy of the HTML Help starter kit two ways. Download it at www.ehelp.com/kit or you can call eHelp Corporation at 800-796-8459.

FREE HTML Help Starter Kit

Speed Up Help Development by 50%

Safelite Reveals How with RoboHELP

Safelite AutoGlass Corporation, America's largest supplier of auto glass replacement and repair services, chose RoboHELP to create their HTML Help.

"In half the time it took to develop a Help file with Microsoft's HTML Help Workshop, RoboHELP enabled us to convert the file, spruce it up with extensions, and make it more visually appealing," said Gerald Mindek, product development analyst at Safelite.

❝ RoboHELP enables our designers to learn and begin Help creation more quickly than with any other products we have seen. ❞

The first reason Safelite chose RoboHELP was because of its capabilities. "RoboHELP has such great flexibility when it comes to creating and designing Help files. RoboHELP's single source feature and HTML Help generation enabled us to be less concerned about what format a Help file should be in," he added.

"If we need to create HTML Help or printed documentation, but the current Help is in WinHelp, this is not a problem thanks to RoboHELP's single source features. Secondly, the interface provided by RoboHELP to create and design Help files is impeccable. RoboHELP enables our designers to learn and begin Help creation more quickly than with any other products we have seen. The availability of commands with keystrokes and in menus is great, the organization is intuitive, and RoboHELP's own Help file is very informative," Mindek said.

A D V E R T I S E M E N T
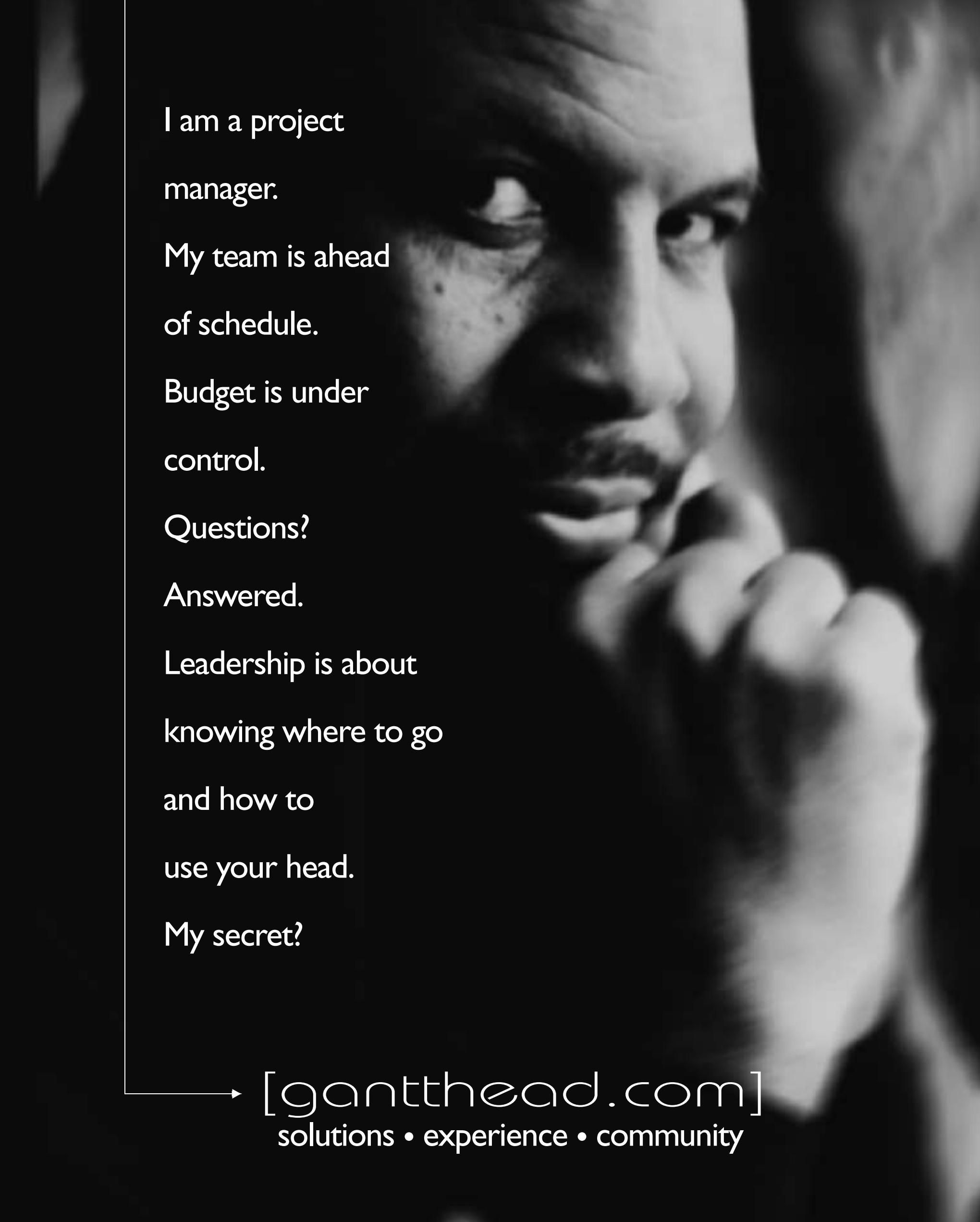
I am a project

manager.

My team is ahead

of schedule.

Budget is under

control.

Questions?

Answered.

Leadership is about

knowing where to go

and how to

use your head.

My secret?

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solutions • experience • community

IBM to Ride the Penguin's Coattails

Big Blue looks to boost server sales with Linux for System/390

BY EDWARD J. CORREIA

The workhorse of the IBM Corp. enterprise computing line is pairing up with the prevailing newcomer of the operating-system world. IBM has developed and released for testing a set of Linux drivers and extensions for its System/390 series of high-end enterprise computers in a move the company says will help it strengthen its position in the high-end server market.

"Clearly it is going to provide us opportunities to sell more hardware; that's one of the reasons we're interested in it," said Steve Carre, IBM's manager of OS/390 and Linux marketing. The move also was designed to provide IBM customers with more choices.

"Today we have OS/390, and we're trying to get as many applications on [it] as we can, but it's a difficult port. We believe we can get more application vendors and application providers to go to Linux because it's a much easier port and migration than it was to OS/390," he said, indicating that in most cases, all that is necessary is for code to be recompiled.

Carre was quick to point out, however, that the development of Linux for the S/390 was not designed as a migration path for current OS/390 customers. "Today the System/390 is running a lot of transactions and 'bet-your-business' applications," he said, which IBM believes are not the applications of the Web and of e-business. The application development products for OS/390 are not Linux-compatible.

Rather, the move was designed to attract new customers to an industry stalwart that is now taking its first steps toward an open-source operating system. But some of the characteristics that attracted customers to the S/390 as a high-end server platform—its scalability and high availability—disappear when IBM's OS/390 is replaced by Linux, and customers looking for those features will have to wait.

"We've spent a lot of money on our OS/390 and MVS [Multiple Virtual Storage] platform, making it very available," explained Carre, "and we have worked with the hardware, the operating system and the middleware. What you would get with the Linux environment is many of the qualities of service of the hardware," including hardware redundancy, but very few of the software features, which Carre said will come over time. "The extensions that we have done fundamentally were device drivers and compilers. We are looking to enhance the product, and Linux will be there over time, depending on how the open-source community views this."

A link to the source patches required to build Linux for the S/390, all of which are or will soon be open, can be found at http://oss.software.ibm.com/developerworks/opensource. Since first being posted late last year, the patches have been downloaded 1,450 times. ∎

BACK DOOR

Microsoft issued a revised bulletin, still encouraging the removal of DVWSSR.DLL, which does contain an unchecked buffer, though early reports of the potential severity of compromise from overflowing that buffer depended too heavily on permissions being misconfigured. By the advent of the revised bulletin, Microsoft rejected the notion of a back door it had seemed to own up to in earlier reports. Lipner told *SD Times*, "There was no back door…Microsoft has a very firm corporate policy against the introduction of back doors in products, and there has never been an instance of a back door being found in one of our products."

WATCH YOUR BACK

Although it appears Microsoft dodged a bullet in this instance, the fact is that back doors are so easy to add, difficult to detect and tempting to install, the possibility they're in your code is very real. And that's a huge risk. "As the software author, you cannot insert back doors," said Dan Kaminsky, security analyst for DoxPara Research (www.doxpara.com). "The mistake people make is saying, 'We have the right to see how they're using the software, or to make sure they're not pirating it.' *Never* expose your genuine customers to risk, even if it will help you catch thieves.

Don't put in a way for you to control your customers' systems over the network and trust the Internet to identify you—the network can lie (with spoofed IP addresses, etc.). …Never intentionally put a command in software that allows you to do something on the customer's hardware—it's *their* hardware. You're violating the law and opening up a hole for everybody else to violate the law," said Kaminsky.

William J. Orvis, security specialist with the U.S. Department of Energy's Computer Incident Advisory Capacity Team (www.ciac.org), said, "If you're really concerned about something like that, then you've got to have team members reading each other's code. If it's your latest copy of a word processor, so what? It doesn't do anything. If it has anything to do with the Internet, you should be [peer reviewing] anyway—looking for buffer overflows and other vulnerabilities. You have to make sure that the service is strong and can't be broken into. Make the search for back doors part of your quality-control process." Even managers who aren't programmers can have team members read each other's code.

"It also depends on how big a company you are," said Orvis. "If you're a [huge company], you've probably got a whole team of quality-control people. But even then, it's really easy to slip one of these things in there, especially if someone wanted to be really stealthy. If the programmer stuck in a back door just as a convenience to himself, he might have marks around it with a reminder to take it out, but if it's stealthy, it looks like something else," said Orvis.

"A back door can consist of as little as one line of code, and there's no particular flag," said Orvis. "If the programmer creates a command line that has some odd-sounding name to it, you might not see it. You've got to completely understand what your code is doing to spot it. It comes around to the other problem—making sure the people you're working with are people you trust."

If you don't want to gamble on the honor of those around you, open source will get you lots of free peer review. ∎

FROM MESSAGE QUEUES TO REAL TIME

Who would have thought the recent ruling against Microsoft would result in a legal definition of middleware? Regardless of whether you exulted in or deplored Judge Thomas Penfield Jackson's assessment of Microsoft's conduct, you had to wonder who schooled him on the technical taxonomy. Consider, for example, the following excerpt from the decision (United States of America v. Microsoft Corporation): "...Microsoft sought to convince developers to concentrate on Windows-specific APIs and ignore interfaces exposed by the two incarnations of middleware that posed the greatest threat, namely, Netscape's Navigator Web browser and Sun's implementation of the Java technology." *Hmm…Netscape Navigator? Middleware? You mean I've been writing about the wrong technologies all along? [No comment. –Editor]*

All kidding aside, the definition of middleware has been undergoing a rather dramatic expansion the past few years—certainly CORBA and EJB can be added to the mix, and much of EAI and other technologies that provide glue between applications are also new candidates for the appellation. Indeed, just about anything that is not on the desktop or the database server is arguably middleware.

Predictably, of course, most of these vendors go way out of their way to avoid using the term (the "m" word, as it were) for fear of being lumped with old-fashioned bread-and-butter messaging infrastructure that often delivered data to and from IBM mainframes. The true-blue, Big Blue middleware package, MQSeries, is the dominant player in this market, and indeed in terms of traditional middleware it perfectly fits the bill.

IBM's MQSeries and many of the traditional message-oriented middleware (MOM) implementations are message-queuing. (Hence the name MQSeries.) This means that they dump messages into queues for clients to pick up later. By queues, you should understand "files." Messages are written to a designated file where the client can go look them up asynchronously—that is, at any time.

Message-queuing middleware is used wherever data needs to be moved back and forth between disparate systems and where there is no overwhelming need for speed. The stock in trade of these packages is multiplatform data movement. Speed is a secondary consideration. That's not to say

MIDDLEWARE WATCH

ANDREW BINSTOCK

these packages are slow; however, they are nowhere close to real time.

Real-time middleware is used in environments where high-speed distribution of live data is of prime importance. A classic case, of course, would be stock exchanges where stock quotations must be distributed widely and very quickly. The two significant players in this market are Tibco and Talarian. They both use publish-and-subscribe models. In these, clients specify what data they are interested in. The publishing end of the equation broadcasts the data, and the subscribers then receive the data they were interested in.

The companies use different approaches. Tibco's implementation puts client software on each desktop. Then it monitors the data broadcast and culls from it whatever the client has subscribed to.

Talarian's implementation, by contrast, does not do the filtering at the client desktop. Rather the servers forward only the messages in which the desktop client has expressed interest.

Like traditional queuing middleware, both companies' products offer a wide variety of interfaces to their messaging systems, so that they can be deployed in all manner of heterogeneous enterprises.

My guess is that the future of middleware is in the real-time packages. Today's enterprises are under pressure to deliver speed of execution, which means speed of data delivery. And as back-office systems are increasingly connected to Internet/Web interfaces, the ability to move data quickly to where it is needed is a competitive advantage.

IBM has recognized this by a rollout a while back of a publish-and-subscribe overlay to MQSeries. This is the first step in moving toward high-speed data delivery. But since this package dovetails with the slower message-queuing infrastructure, delivery times have not been in the real-time domain.

Another aspirant to faster delivery is Microsoft, with its MSMQ package. As you can gather from its name, it too is a message-queuing implementation. It lacks the great penetration into the enterprise needed to really test and establish middleware. However, despite this lack of widespread deployment, the product is expected to acquire a publish-and-subscribe aspect and improved delivery times.

In the meantime, Tibco and Talarian are well placed to handle the workload for the foreseeable future. ∎

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MAKING THE BUILD-OR-BUY DECISION

The biggest decision you'll have to make in setting up your Web storefront is whether to build it yourself out of specialized components or buy a ready-made solution of an integrated software suite. Neither option is very satisfying, especially for newcomers to e-commerce. Instead, I will propose a third alternative for you to consider.

The problem with most Web storefront software packages is that they don't always come in ready-made solutions. You might think that you could go out and get a shrink-wrapped product suite. However, what you'll find is something more on the order of a suite of network management applications: meaty, big and lots of work to install, configure and understand. Products like Microsoft Site Server, IBM's net.Commerce and Intershop's commerce server may come in one box, but they span several different technologies: Web servers, database servers, programs for shopping carts, banking gateways, inventory tracking and customer management. Buying into one of these products is buying into a large-scale software development project, because you have to do all the heavy lifting of integrating these various pieces. All that these suites do is place a bunch of software on your hard disk and leave the rest up to you. They really are nothing more than toolkits.

So maybe you forgo the suites entirely and just start from scratch with the do-it-yourself option. You have already hired plenty of software coders, champing at the e-commerce bit, ready to write all the Perl scripts you'll need to set up shop on the Web. Your guys claim to understand, live and breathe HTML and can put together a good-looking Web page in their sleep. But lines of Perl and pretty HTML do not make a Web storefront. You need to understand what your customers want, how they will shop for it, and most important, what will make them keep coming back for more. And I'm not as confident that your development team really understands all of these issues.

To help them learn how, you need to put quickly in place a prototype Web storefront, without a lot of fuss and bother and without spending a lot o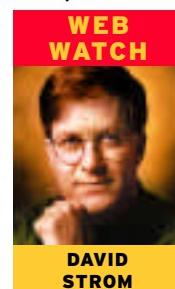f time developing something that might be obsolete before you finish. The trouble is, you may not truly understand how to manage a Web storefront development project. And you don't want anyone to know this dark secret. What to do?

Here is my tip—a radical notion to rescue you and pull together your team: Use one of the many free-to-inexpensive rent-a-storefront Web-hosting operations that are out there and get your store online quickly. I am talking about the likes of Yahoo Store, iTool, Intel's iCat, Amazon.com's zShops or BigStep.com, just to name a few. If these guys charge anything, it is minimal—on the order of $20 per month. You can set up your storefront in less than an hour and have something to use as a teaching tool for your development staff almost immediately.

The nice thing about these low-level hosting providers, once you get over their lack of cachet, is that they aren't as low-level as you might think. Some of them have depth in terms of payment systems, inventory tracking and reporting so you don't have to go through all the trouble of setting these messes up. You get the benefits of their online operations, including all sorts of management and usage reports via a Web browser, so you can figure out where your customers are visiting and what they are buying in real time.

I'm not saying that you should run your storefront with these outfits for very long—unless you are happy with their limitations on page design, database size and other constraints. Just use your first storefront as a way to understand how to design your ultimate store (or at least version 2) and how to organize your software development team accordingly. For example, you might find out that your existing computer inventory system doesn't easily extend to the Web, or that your existing accounting systems can't interact with online payments. Or that your current Web site isn't going to work with an e-commerce piece tacked on and will need its own makeover to integrate into your ideal storefront. Whatever you find, use these training-wheel e-commerce providers to help you figure this all out. And save the coding for the hard work later on, when your boss asks that you put together a "Web special offer" to roll out within the next week. ∎

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CULTURE CORNER

The Google search engine just informed me—in a query that it executed in 0.04 seconds and then boasted about—that the word "Linux" can be found on about 1,560,000 Web pages. Yahoo's search engine seemed to take a hundredth of a second longer, but it identified 1,976,792 pages. Yahoo could find only 201,474 pages—an order of magnitude fewer—containing the phrase "open source." That's gotta drive the open-source gurus crazy.

Judging by the headlines, Linux *is* the open-source movement. Mainstream journalists who never heard of BSD or Sendmail became overnight open-source software experts the day Red Hat went public and Linus Torvald's tongue-in-cheek goal of world domination began to seem plausible. It's one of those good guys vs. bad guys contests that journalists love: Redmond's monopolistic empire crumbling under the onslaught of a grassroots alternative technology thrown together by volunteers working nights and weekends. What a story!

Unfortunately, that's not the real story. No matter. The real story is even better.

Open-source software is as old as the computer itself. Any list of milestones must include Unix, which AT&T software engineer Ken Thompson wrote in 1969. Unix begat the "Berkeley Software Distribution," which in time became the open-source operating system we now know as BSD. And BSD in time begat Linux.

But of course there's more to it. Open-source software runs the Internet and a high percentage of the systems that are connected to it.

In addition to Linux and BSD, the open-source world has given us Bind, Sendmail, PHP, Mozilla, KDE/Gnome, Gimp, Kaffe, Perl, Emacs, CVS, GCC, gdb, RCS and Samba. And let's not forget Linux's first killer app: Apache, the open-source program server that powers more than half of the world's Web servers. Without open-source software, the Internet simply wouldn't run.

Tomorrow's killer apps are available for downloading—with complete source—at dozens of open-source repositories. Millions of megabytes are available from such repositories as Debian, FileWatcher, FreeBSD, the Free Software Foundation and Freshmeat. Tens of thousands of C, C++, Perl, Awk, Python, Tcl/Tk, and Java source files are free for the downloading.

Once you get the code, you are free to hack at it in any way you like. Debug it. Extend it. Port it. Translate it. Optimize it. That's what "open" means.

Upon making improvements, you may want to share them. You could set up a Web page with a pointer to your FTP server and hope people find it, or you could work with established open-source community mechanisms to share your contribution in a more useful way.

Coordination is the charge of organizations like VA Linux's SourceForge project, Silicon Valley start-up Open-Avenue, and the listservs and newsgroups listed at metalab.unc.edu/pub/Linux/!INDEX.html.

The coordination of open-source projects has turned out to be so important that everybody seems to be getting into the act. Netscape hosts the Mozilla development project, while Silicon Graphics hosts more than two dozen projects at its Developer Central open-source Web site. At IBM, open-source projects are hosted at oss.software.ibm.com/developerworks/opensource. In all these cases, the hosting organization's goals correspond to the three-part mission statement Netscape posted at its Mozilla site: fostering communication among developers, identifying technical leaders and maintaining the source code.

Much of this happened accidentally. Programmers were in the right place at the right time and inadvertently made history. Look lively—it could happen to you.

But the open-source movement isn't all random chance. It has been blessed by the active involvement of a cadre of programmer-philosophers who have recorded events, interpreted history, facilitated communication, sought consensus and spoken on the movement's behalf.

No single member of this group has been more important to its success than Eric S. Raymond.

You may not have heard of Raymond, but you know his work. Raymond was an archivist of the MIT jargon file and the author-of-record of the file's published version, "The New Hacker's Dictionary." He has contributed to a wide range of software products—you can check out his resume at his Web site: www.tuxedo.org/~esr/resume.html. While you're there, take a look at the Halloween Papers, a set of Microsoft internal memos that outline a strategy for belittling the open-source movement and defeating Linux.

The most notorious of Raymond's accomplishments has been his thoughtful articulation of open-source philosophy in a series of essays and HTML pages. At the core of this series is "The Cathedral and the Bazaar," a long comparison of traditional proprietary software development with the open-source way of looking at the world. This document, which was recently published in book form by O'Reilly & Associates, is as close as we're likely to get to a manifesto for the open-source movement. The full text of the essay is online; ask any search engine where to find the cathedral and the bazaar.

Instant Linux fortunes put the open-source movement on the radar of the mainstream press, but there's much more to the movement than a freely distributable Unix clone. The open-source movement has spawned a wide variety of important tools, a long and well-documented history, a supporting framework of organizations and Web sites, and a thoroughly articulated, well-thought-out philosophical substrate. ∎

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THE HEART OF B-TO-B E-COMMERCE: XML AND EDI

Attending the spring Internet World conference in Los Angeles was an experience tinged with desperation. The Nasdaq's tumultuous ups and downs and articles in both the mainstream and trade press proclaiming that "e-tailing" was in for hard times combined to bring about a new level of aggressiveness in dot-com marketing, sales and PR folk.

This resulted in two basic trends: First, you just couldn't get away from folks loudly proclaiming that the New Economy bull market definitely wasn't over no matter what the real life signs indicated. Second, everyone who could shied away from consumer-oriented site strategies like surfers from a shark fin. Instead, the new buzzword for Internet 2000 became "B2B" or "B-to-B"— business to business. Auction software became "e-procurement services"; broadband backbone services became business connectivity services; and new wireless connectivity options became better ways for business partners to access your portal instead of a new way to bring customers into your foundering e-store.

Fortunately for me, a dot-com I'm working with was meant for B-to-B all along. And, it just happens to concern electronic payment and billing technologies. Along the lines of business-to-business financial transaction processing, the Internet World conference had little to offer, although consumer-oriented service providers CyberBills and Paylinx actually had some very slick demos. But that's not to say that there is no activity in this space.

A very important meeting recently took place in Orlando, Fla., and was held by the Electronic Business XML Initiative organization (ebXML) with a follow-up meeting to be held in Brussels even as I write this. An important topic in these meetings is ways to ease the conversion of Electronic Data Interchange (EDI) transactions via XML. While more work exists to be done, the Orlando meeting apparently managed to resolve a number of key issues.

Since most EDI is based on what boils down to ASCII-based documents, you might wonder what the holdup is, but this slowdown isn't on the EDI side. That's an established technology. Instead, the wild and woolly world of XML development has resulted in a number of different EDI-oriented data exchange mechanisms, which need to find a way to work together as well as with EDI, Electronic Funds Transfer (EFT), Automated Clearinghouse (ACH) and other hard-line electronic financial transaction processes and data formats. In addition, a key point in ebXML's charter is to find ways to make EDI as accessible to small and medium-sized business as it is to the Fortune 1,000. This may mean doing away with the high cost of middlemen, like the value-added networks that are now a requirement for EDI. To this end, key points that were covered in Orlando included a Transport, Routing and Packaging specification, as well as Requirements, Conceptual Architecture, Core Components and Message Structure and Headers specifications.

If managing an XML to EDI solution just dropped onto your plate, however, don't despair. You're not entirely stuck waiting for a standards committee. Some development utilities already exist for the Windows NT/2000 platform that address such a project. A key ratchet in an XML to EDI toolkit is compression, because while EDI is a relatively thin ASCII document in its native format, it can bloat to 15 times its original size after running through XML conversion. This can result in EDI files that are over 1MB in size each, and that means real problems for existing legacy EDI applications that weren't designed to handle traffic of this size.

While there are several manual workarounds for this problem out there, dedicated XML compression utilities are still scarce. A good one, however, is a freeware application from XMLSolutions called XMLZip (www.xmlzip.com). XMLSolutions also makes other XML development tools for both the Windows and Linux platforms. But why would you need a compression tool dedicated to XML when there are perfectly good general-purpose tools such as G.Zip or PKZip? Because XML documents have an inherent hierarchical structure, and XMLZip allows users to compress and decompress XML documents and portions of those documents. That means you can compress at the root, child or grandchild node level—dynamically.

XMLZip manages this via its Document Object Model (DOM) interface. The DOM interface lets XML developers access and manipulate an XMLZip-compressed document as though it weren't compressed at all, which means applications won't have to alter their code bases in order to make use of compression. Just what the doctor ordered when it comes to bringing megabyte-sized EDI files down to size. While this won't solve all your XML/EDI headaches, it's a surprisingly useful and effective start. Check it out. ∎

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WINDOWS WATCH
OLIVER RIST

READING (A STOCK) IS FUNDAMENTAL

You've just won the Super Bowl, and you're going to Disney World. Your eyes burn from the magnum of champagne poured on your head, yet nothing has ever felt this good. It's the culmination of all the moves you made, the deals you wangled, the people you put in place. You signed the right free agents, locked up your top prospects with long-term deals, your game plan meshed perfectly with the talents of your players and everything just clicked. Jersey sales are up; season-ticket holders are re-upping. Life is good.

MONEY WATCH

DAVID RUBINSTEIN

Fast forward two seasons. Your free agents walked, and the only ones available to you are looking at the downside of their careers…yet still will command million-dollar salaries. Two of those can't-miss prospects, who have developed into your top starters on defense, tore up knees during off-season conditioning drills and are lost for the season, perhaps longer. Your offensive guru has taken the head coaching job someplace else, and your quarterback can't get on the same page with the new coordinator. You changed logos to give sales a boost but didn't foresee a fan revolt. You throw millions more at college seniors on draft day, hoping that one of them actually will contribute down the line. Basically, you're in an uncontrolled downward spiral.

When this happens, the cry heard from the owner's box always is the same: "We've gotta get back to basics!" Draft more intelligently, don't throw big dollars at has-been free agents, work harder to keep key personnel in place, simplify the game plan.

Now, before you think you've picked up a copy of *The Sporting News* by mistake, let me draw a comparison here.

For a couple of years, with Microsoft Corp. leading the way, the Nasdaq has been on top of the world. Technology companies had positioned their strategies to take advantage of the seemingly endless flow of venture capital, they timed their IPOs perfectly to maximize market capitalization, and they paid huge salaries and options to their engineers to keep them on board.

Then the unthinkable happened. Companies found that their business didn't provide them with a solid base of earnings. Their brands never captured the imagination of the public. Their key people were leaving to launch their own companies. The well of easy financing was starting to run dry.

On Wall Street, the cry from the investors has been the same: "We need to emphasize the fundamentals."

The pendulum has swung back, and investors who led the high-speed, high-energy, high-finance land rush into high technology now are looking at such mundane measurements as earnings per share (EPS) and debt ratios. They want to know if companies can sustain a competitive advantage if they put into place a market plan based on revenues and profitability.

So while the Nasdaq shakes out, and the dot-coms scramble to latch on to one of the few remaining teats at which to suckle, take a closer look at the performance of some "infrastructure" tech companies that have reported higher-than-expected earnings and record-setting revenues.

Rational Software Corp. reported record fourth-quarter revenues. Sun Microsystems Inc. beats the earnings-per-share estimates. BMC Software Inc. also beats the EPS, by two cents per share, and shows revenues that are $20 million higher than forecasts. These are but a few of the success stories.

"While we embrace the new economy, things certainly look better from the vantage point of a Cisco or an Oracle than eToys or CDNow," said Daniel Petris of Argus Research. The point, of course, is that a sagging Nasdaq is not the death knell for the high-technology industry, but merely a die-off of some weaker species. As Petris said, "From a stock standpoint, many dot-coms deserve to die. As stocks, they were tremendously overvalued."

Petris also cautioned about a simple return to fundamentals, saying that many of the accounting practices used to measure company performance, which were put into place during the machine age, simply are no longer applicable to the information age.

"It will require a little more legwork than just using PE's," said Petris. "Investors are going to have to roll up their sleeves and go through such things as noncash charges and revenue recognition policy, and then do a fundamentals analysis."

In other words, in a market as volatile as this one, stop throwing money at dot-com start-ups with no real plan to achieve earnings. Those huge run-ups may be a thing of the past. Simplify your investment strategy to keep your focus on companies that are here for the long term. Work harder on your research before throwing big dollars at underperformers.

And then, perhaps, you'll get another chance to slip the championship ring onto your billionaire finger. ∎

David Rubinstein is executive editor of SD Times.

STOCK WATCH

$2 BILLION-PLUS

Company	Symbol	Close 4/25	Market Cap. (billions)	Shares Out (millions)
Microsoft	MSFT	68 15/16	344.90	5,177.00
Oracle	ORCL	74 7/8	205.60	2,847.00
Sun Microsystems	SUNW	93 1/8	153.10	1,747.00
SAP	SAP	48	31.34	1,255.00
Computer Associates	CA	50 11/16	27.17	542.00
BMC Software	BMCS	41	9.26	244.00
BEA Systems	BEAS	41 1/4	9.08	123.00
Citrix	CTXS	55 15/16	8.39	179.20
Rational Software	RATL	81	6.17	86.00
Red Hat	RHAT	28 1/8	3.99	149.00
CompuWare	CPWR	11 9/16	3.97	360.50
PeopleSoft	PSFT	14 11/16	3.80	274.08
Symantec	SYMC	58 31/32	3.27	59.12
Network Associates	NETA	24	3.18	139.30
Cognos	COGN	70	2.80	42.68
Informix	IFMX	11 3/8	2.14	201.30

$2 BILLION – $500 MILLION

Company	Symbol	Close 4/25	Market Cap. (millions)	Shares Out (millions)
RSA Security	RSAS	53 3/4	1,900	39.77
Entrust	ENTU	36 3/4	1,860	53.02
Sybase	SYBS	21	1,490	81.53
Allaire	ALLR	53	1,300	26.19
Iona Technologies	IONA	55 13/16	1,010	19.45
Legato Systems	LGTOE	12 7/8	903	84.98
Baan	BAANF	4	856	214.50
Serena	SRNA	22 1/2	753	25.42
SilverStream	SSSW	40 7/8	707	82.50
ILog	ILOG	42 3/4	598	14.40
Marimba	MRBA	29 7/8	578	23.08
Brio Technologies	BRIO	24 1/16	578	27.54
Saga Systems	AGS	18 1/16	513	28.93

$500 MILLION & UNDER

Company	Symbol	Close 4/25	Market Cap. (millions)	Shares Out (millions)
Axent Technologies	AXNT	17 1/8	459.0	28.00
Interleaf	LEAF	31	419.0	13.51
Merant	MRNT	12 1/4	418.0	28.80
Cysive	CYSV	38 5/16	400.0	11.39
Open Market	OMKT	9 3/8	389.0	43.86
Viador	VIAD	21	356.0	16.46
Rainbow Technologies	RNBO	31 3/4	325.7	11.46
Inprise	INPR	4 29/32	286.0	57.93
Persistence	PRSW	15 1/2	271.1	19.12
Excelon	EXLN	10 3/16	267.6	28.49
Digital River	DRIV	13	262.0	20.74
Be	BEOS	7 11/16	253.8	34.40
Map Information	MAPS	28 1/2	243.2	8.72
SCO	SCOC	6 13/16	229.5	35.30
StarBase	SBAS	6	226.5	42.15
Aladdin	ALDN	18	204.6	11.36
Unify	UNFY	12 1/8	204.6	18.39
Centura Software	CNTR	4 11/16	173.8	35.42
EarthWeb	EWBX	11	107.2	9.76
ISG International	CDSW	6 1/16	73.0	12.55
Rogue Wave	RWAV	5 5/8	58.3	10.48
Fatbrain.com	FATB	4 13/16	55.7	11.42
Gensym	GNSM	5 1/4	38.7	6.16
Programmer's Paradise	PROG	3 1/2	18.2	5.11

ON THE INSIDE

A little profit-taking was evident at BEA Systems Inc., where senior vice president of engineering Terence Dwyer sold 40,000 shares between March 1 and 3 for around $128 per share. Sam Cece, the president of the e-commerce services division, sold 43,743 shares between March 6 and 7 at about $133 per share.

At Legato Systems Inc., whose stock was battered by a class-action lawsuit and might be delisted from the Nasdaq due to a late SEC filing, David M. Strohm sold 192,000 stock options at $21 per share on Jan. 31. At Citrix Systems Inc., president and CEO Mark B. Templeton sold 30,000 shares on March 2 at almost $99 per share.

And returning to top the list? Microsoft Corp. co-founder Paul Allen, who will be retired to the Insider Hall of Fame after this listing. We reported in our April 15 edition that he sold roughly 16 million shares at about $98. This time, he sold 24 million shares between March 1 and 7 at between $90 and $98 per share. But can all this money buy an NBA championship for his Portland Trailblazers?

SILVERSTREAM

The new tools are designed to work with SilverStream's Application Server, said Keith Daniel, SilverStream's vice president and general manager of e-business solutions, but can work with other Java 2 Enterprise Edition (J2EE)-compliant application servers.

BUILDING PORTALS

Silverstream's Portal Framework is designed to be an application framework for the creation of business-to-business and business-to-consumer Web portals, said Daniel. "We believe a portal solution based on a standard application server foundation is the most effective way to ensure portal manageability, reliability and scalability," he added.

According to Daniel, the Portal Framework product line includes a Portal Component Framework, which allows the various parts of a portal user interface to be created as components and then assembled either by Web designers in tools such as Macromedia Inc.'s Dreamweaver, or directly by site visitors who are doing "My Yahoo" style personalization; Portal Services, which sit on top of the application server and provide core features, including user profiling, personalization, work flow, caching, content management, etc.; and a library of prebuilt components such as a knowl-edge base and visual navigation trees. Some components will be developed by SilverStream, others by third-party providers.

At first, according to the company, the Portal Framework will support SilverStream's own Application Server. Subsequent releases, said Daniel, will work with other J2EE-compliant application servers.

A key element in the Portal Framework, said Daniel, is its flexibility. Customization can be both rules-based and user-controlled. The framework applies business rules to specific groups of users; the rules, said Daniel, can be created and managed by line-of-business staff, rather than by professional Web developers. Silver-Stream also provides what it calls "My Yahoo"-style personalization, where site users have control over the specific content and the look and feel of their "personal" portal.

Content used in the portal is stored in a database repository and is presented in HTML, XML and XSL (XML Style Sheets); XSL templates can be used to transform the content into the format required by the client. Although the Portal Framework does not include a database server, said Daniel, the recommended relational database system is Oracle. The company has no plans, he said, to bundle the Oracle database with Portal Framework.

By mid-April, said Daniel, the Portal Framework was in a tightly controlled beta at approximately 10 companies; as the Portal Framework is not a "shrink-wrapped" solution, he said, users will require services from SilverStream in order to work with the product. He projected that the Portal Framework would be generally available by the end of the second quarter, with the typical implementation costing $500,000 and up for software and services.

B-TO-B IN A BOX

For enterprises looking for a more tightly integrated, shrink-wrapped solution for their business-to-business commerce, SilverStream is also beta testing a B-to-B integration server suite named xCommerce, based on software the company acquired with its purchase of Gemlogic Inc. in December 1999. Gemlogic and its product lines now represent SilverStream's B-to-B Solutions Division.

"XML has emerged as the universal language for connecting communities of trading partners across the Internet," said Fred Holahan, vice president and general manager of the B-to-B group. "But XML alone does not define and manage the rules, events and processing flows of complex B-to-B exchanges. By leveraging the enterprise features of standards-based commercial application servers, xCommerce delivers breakthrough levels of usability, scalability, connectivity and fault-tolerance for deploying XML integration services."

The xCommerce suite includes two primary components: xCommerce Designer, a visual XML development and integration environment; and the xCommerce Server, which runs as an application on a J2EE-compliant application server. The suite also includes so-called xCommerce Enterprise Enablers, which connect the application server with external databases and applications. The initial set of Enterprise Enablers will be for Java and JDBC, said Holahan. Additional connectors are planned for S/390, AS/400s, EDI and packaged applications, such as Ariba, People-Soft, SAP and Siebel.

According to Holahan, xCommerce entered beta in April and will ship in the second quarter of 2000. Pricing was not disclosed. The xCommerce Designer runs on Windows NT/2000 workstations, while xCommerce Server will be deployable on top of J2EE application servers running on Windows NT/2000, Unix and Linux. At first, the xCommerce Server will work with both SilverStream's application server and IBM's WebSphere application server.

EMBRACING LINUX, SUN

Also at the WorldWide User Conference, SilverStream revealed that it had formally licensed Sun's Java 2 Enterprise Edition from Sun Microsystems Inc. for use in its Sil-verStream Application Server. In addition, the company revealed its commitment to a Linux version of the Application Server, which currently runs on HP-UX, Solaris and Windows NT/2000.

Although SilverStream's Application Server version 3 had already been J2EE compliant, the company had never formally licensed the technology from Sun.

Sun executives lauded Silver-Stream's move. "With its eBusiness Platform products based on J2EE standards, SilverStream Software makes a strong statement that they understand the value the Java platform brings to e-business solutions," said George Paolini, vice president of Java community development at Sun, in a statement. "Silver-Stream's dedication to the continued development of Java technology attests that licensees are committed to the technology and deliver on their promise to provide customers in a timely manner with flexible, open and comprehensive solutions responding to their critical e-business needs."

The Linux version of the Application Server is expected to begin external beta testing in the second quarter of 2000, said the company, and will be initially supported on RedHat Inc.'s Linux version 6.1 running with Sun's Java 2-ready Java Virtual Machine. General availability is projected for the third quarter, with pricing of $15,000 per CPU. ∎

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